

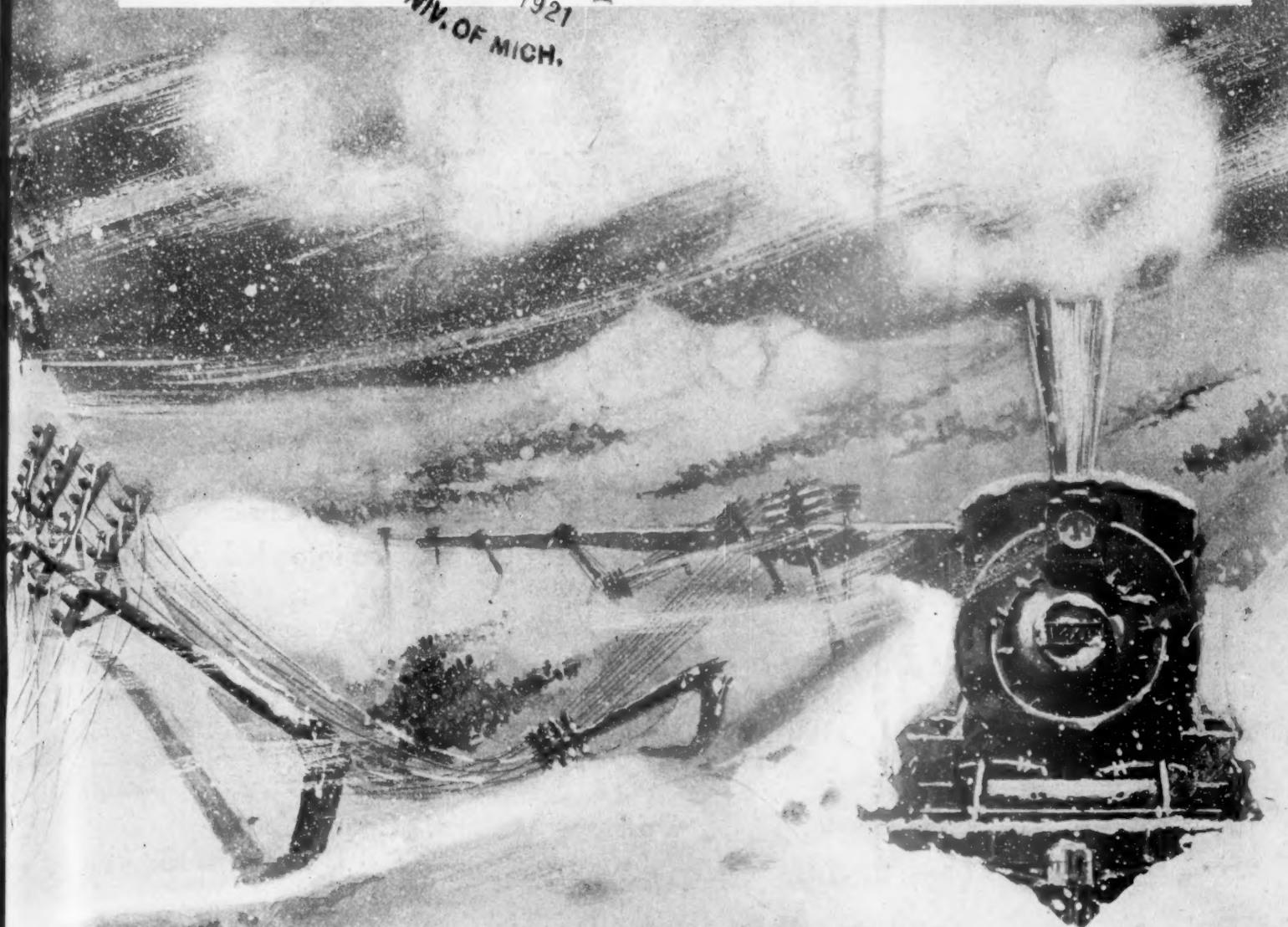
Railway Age

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SIXTY-SIXTH YEAR

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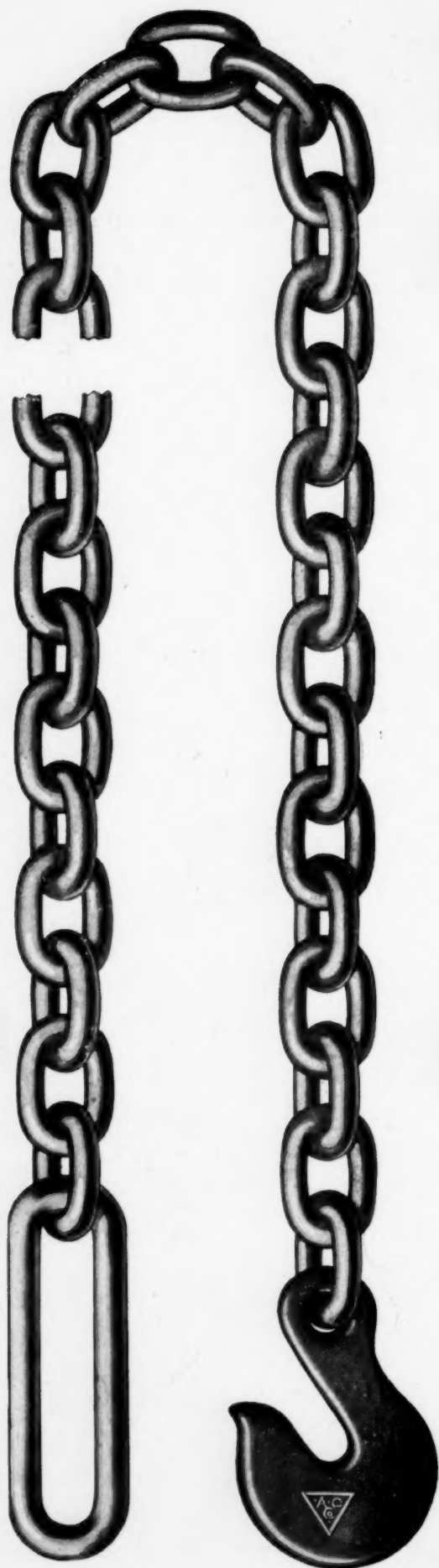


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LARGEST CHAIN MANUFACTURERS IN THE WORLD

EDITORIAL

Railway Age

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The Coal Trade Journal says that the operators are incensed at the action of the railroads in rejecting coal, and claims the roads "are seeking to avoid living up to their obligations." For several years the railroads have paid prices that are all out of reason but when, on top of these exorbitant prices, they

Adding Insult to Injury

have been forced to accept some of the worst coal that ever came out of a mine, the railroads have felt that this was adding insult to injury. When the Boston & Maine was recently compelled to reject 400 cars of this near-coal the shippers in Cleveland thought that the railroad was taking advantage of a technicality to save some money on a falling market. But when they employed a consulting engineer to report the facts, they discovered that some of the rejected coal was unfit for any use whatever. Now that the tide has turned and the railroads are no longer obliged to accept the poor coal that has been forced down their throats at outrageous prices, the coal trade is talking about a "square deal." This sounds like "kamerad."

The officers and employees of each railroad ought to consider themselves members of a "Conservation Commission," to conserve, not particularly water power, or national forests, or even locomotive fuel or other railroad property; but railroad men. This is the suggestion of J. T. Loree, general manager of the

A "Committee of the Whole" on Conservation

Delaware & Hudson, in a recent circular to his subordinates. This is his interpretation of the duty to seek "safety first," an idea which usually is formulated in somewhat different language. The desideratum is to inculcate the importance of co-operation. To warn a careless man not to step on rusty nails, or to refrain from adjusting drawbars with his foot, sometimes proves an embarrassing duty; there is a temptation to shirk it. But if a thousand fellow-employees are known to be in the same movement, *and the co-operation is manifest*, such duties are not so embarrassing. Mr. Loree does not make the mistake of expecting too much from co-operation per se; he reminds his men that "the results will depend on the personal energy, punch, or pep . . . which causes a man to exceed the letter of the law."

A dollar saved is a dollar earned and it is pretty generally believed that this is the only kind of a dollar the railroads are going to earn during the ensuing interval of business stagnation. Fortunately it is not difficult to discover ways in which the railroads can save money and the fuel bill appears to be

A Dollar Saved Is a Dollar Earned

one of the most vulnerable items to attack. There is no question but what the railroads are going to save fuel; a reduction in traffic will enable them to lay aside the small, uneconomical locomotives and to use the best power they have to the best advantage. The lessened demand for coal will certainly result in the delivery of a better grade to the railroads and the scarcity of good jobs will surely tend to make each employee more inclined to conserve the company's

resources. These factors have so important a bearing on the situation that a reduction in fuel consumption per ton mile or car mile is bound to result whether or not the railroads increase their efforts toward fuel conservation. It is important, therefore, that the railroads should not be misled in the belief that they are making any real progress in this direction just because the figures indicate a fine showing in comparison with the previous year, or even the year before. The railroads must not simply be sure that they are making a fuel saving; they must be sure that they are saving all the fuel that can be saved under existing conditions.

Efficiency and economy, the watchwords for 1921, are subscribed to by every loyal railroad worker. Railroad shop

A Call for Efficient Shop Operation

managements at the present time are laboring under the necessity of increasing production to the highest point consistent with quality and decreasing costs. High production, good workmanship and low unit costs mean efficient shop operation which will help tide the railroads over a business depression and minimize its serious effects. There are three prominent factors in efficient shop operation; namely, machinery, men and methods. It would be difficult, if not impossible, to say which factor is most important since the elimination or impairment of any one of them will seriously reduce shop output. It is proposed in subsequent issues of the *Railway Age* to develop in a series of editorials ways and means of increasing the productive capacity of shops and lowering unit costs consistent with good quality of work. The railroads have been confronted with a labor shortage almost continuously for the past five years. Conditions have changed so rapidly that the managements of overworked shops have found it difficult to "get by." One emergency has followed another in rapid succession and expedients have been adopted to meet them. Under such chaotic conditions there has been little opportunity for formulating or carrying out a constructive program of building up the shop organization. The fact that little improvement has been made in the condition of locomotives or cars since the roads were returned to their owners is evidence that the shops have little reserve capacity if they are not actually inadequate for present needs. This is an opportune time for each road to take stock of the situation in its repair plants, to analyze the tendencies of the past few years and to set out on the right track if the present policies are not giving results.

Some of the railways are giving out statements showing the percentage of their passenger trains which make their runs "on time." The Pennsylvania states that in the first ten days of December it operated 42,568 passenger trains on its entire system of 12,000 miles. Of this number 85 per cent arrived at destination on time, while, including those that started late, 93 per cent made their schedule time over the railroad. On the eastern region 90 per cent of all passenger trains arrived on time, and 95.7 per cent made their runs on schedule time.

Reduce the Number of Late Passenger Trains

The Chicago Great Western shows that in the four weeks ending November 26 of a total of 1,246 trains operated, 1,180, or 94.7 per cent, were on time. A larger number of railways ought to give out statistics of this kind regarding the performance of their passenger trains. They would show the public that the number of trains late is smaller than many believe, and at the same time serve as a stimulus to the officers and employees to get trains over the road "as advertised." Among the principal causes of delays to passenger trains are locomotive failures. The eastern region of the Pennsylvania has given out information regarding delays due to this cause. There were 521 passenger train detentions on the eastern region in October which were caused by locomotive failures. This was 83 less than in the previous month, and 364 less than the number occurring in October, 1919. The total time lost by passenger trains owing to locomotive failures was reduced from 19,664 minutes in October, 1919, to 11,083 minutes in October, 1920. We think that most persons who have traveled much recently have the impression that there have been occurring on the railways an extraordinary number of delays to passenger trains due to locomotive failures, and it is gratifying to note that some special attention is being given to this matter. There is no feature of passenger service that annoys a larger number of people, or annoys them more, than late trains. Delays to passenger trains have been among the principal shortcomings of railway service in this country, and no reasonable effort should be spared to reduce the number of them.

One of the most promising developments in transportation facilities during 1920 was the consideration given to locomotive terminals. This is not so remarkable for what has actually been consummated in the form of completed locomotive terminals as in the terminal development that is under way and that

Locomotive Terminal Development

which is contemplated. Of even greater importance perhaps is the change in sentiment toward terminal development due to a growing appreciation of the importance of the locomotive terminal as an operating factor. Locomotive terminals have until recently been woefully neglected on a majority of railroads. Year after year these railroads have added to the weight of locomotives and to the complexity of this equipment without making any corresponding improvements in the terminal equipment until the limit of terminal endurance has literally been reached and the new power must go begging for want of adequate maintenance between shoppings. It is the lack of suitable terminal facilities that has in many instances retarded the application of efficiency and capacity increasing devices which necessitate any additional maintenance. Moreover, the railroads are waking up to the fact that any reduction in terminal delays is actually equivalent to increasing the power available for service. Also that if locomotives can be kept in service for longer periods between shoppings by means of frequent adequate terminal repairs, this is likewise equivalent to increasing the available power. Obviously, the railroads should get the utmost service out of the locomotives they have before adding to their equipment and when it is observed that locomotives still average more than 50 per cent of their time at terminals and that only 75 per cent of all locomotives are now in a serviceable condition it must be apparent that there is tremendous need for better locomotive terminal and shop facilities. The most notable locomotive terminal development work ever undertaken by any railroad is still under way on the Pennsylvania Railroad. Several units were placed in service during the year and other units are nearing completion. The Michigan Central established a new locomotive terminal at

Niles, and this is only one of many new and interesting projects of a similar character usually involving an entirely new lay-out and a change in engine districts. It is safe to predict that no single feature of the transportation machine will undergo greater relative development within the next ten years than the locomotive terminal.

Misrepresentation, with a Purpose

THE MACHINISTS' UNION, through a paid propagandist, has recently filled the daily papers with charges that the railroads are manipulating public funds in a campaign to drive the railroad unions out of business. At the same time, a petition has been filed with the Interstate Commerce Commission in which the statement is made that the railroads have wasted half a billion dollars in contracts for locomotive repairs and a quarter of a billion on freight car repairs. The motives which the petition ascribes to the railroad managers in causing this enormous waste are, first, to make profitable the operation of equipment companies controlled by the same financial interests which control the railroads, and, second, to disrupt railroad labor organizations. No statistics are given to substantiate the charges made in the petition, but it is probable that the construction contracts to which it refers are the same as those recently mentioned in the House by Representative Huddleston of Alabama. Mr. Huddleston, who has consistently advocated the adoption of the Plumb plan, filled several pages of the Congressional Record with comparative figures to prove that the cost of repair work in the builder's works was four times as much as it would cost the road to do similar work in its own shops. The figures serve only to prove the truth of the old saying that figures don't lie but liars will figure. The data presented is not convincing to anyone familiar with conditions in railroad and contract shops because railroad cost figures are not representative.

Manufacturers find it absolutely necessary to compute the costs of doing work, including every factor of expense. The railroads compile their figures of operating expenses according to the Interstate Commerce Commission's classification, and many items which are properly chargeable to locomotive or car repairs are allocated to maintenance of way expense as, for instance, the maintenance of shop buildings. Furthermore, there is no adequate provision for depreciation of buildings or machinery nor for overhead expenses. The cost of repairs in railroad shops as ordinarily given includes only direct labor and material costs with a small handling charge added and are not comparable with cost data obtained from manufacturers. If the expense of making repairs in the builder's plants and in railroad shops were computed on the same basis, it is doubtful whether the railroad shops could show a saving on similar operations.

The petition filed by the Machinists' Union states that the general public interest is involved in the proposed investigation, but the underlying reason that has led the organization to make these absurd charges is found in the concluding section of the petition, which suggests that no railroad company be permitted to enter into contracts for repair work by outside companies unless given a permit by the Interstate Commerce Commission. It is further proposed that, as a condition to securing such a permit, the railroad companies must show that they are unable to do the work or that they cannot do it at as low cost as it can be done by outside companies, and if the permit is granted, that the same rates of compensation and the same conditions of employment will be observed by the contractors as are established by the Railroad Wage Board.

The officers of the Machinists' Union are or should be familiar with the conditions existing in railroad shops. They

know that the charges made in their petition are groundless and the circulation of such statements in the daily press is intended merely to influence the action of the Railroad Wage Board which, this week, begins hearings on the question of continuing or abrogating the national agreement. No other single factor has been more largely responsible for the decrease in efficiency in railroad shops than the restrictions imposed by this agreement. Having secured great increases in compensation of railroad shop employees and having imposed conditions that break down discipline and make efficient management difficult, if not impossible, the Federation of Labor is trying to prevent the railroad managers from reducing costs through the only avenue of escape that is now open, by letting work to contract shops. There is little danger that this attempt to muddy the water will deceive the Interstate Commerce Commission or the Railroad Labor Board. Its only effect will be to inflame still further the minds of the uninformed readers of the daily press who believe the mis-statements regarding the Plumb plan and similar propaganda given out by the same organization.

Supervision of the Lesser Crafts

ONE OF THE PERPLEXING PROBLEMS of supervision in the maintenance of way department concerns those crafts requiring the employment of a relatively small number of men. This applies particularly to the painting and water service forces, but on lines doing only a small amount of permanent work it may apply also to the concrete forces. As a general rule, these gangs are supervised by foremen who report to the master carpenter or bridge and building supervisor, but owing to the fact that the duties of the supervisor are concerned much more with bridge and building carpenter work, his position is usually filled from the ranks of the carpenter foremen.

This practice places a definite barrier in the way of promotion for the foremen of the other crafts, while the supervisor, because of his close contact through long experience with carpenter work, has a general tendency to deprecate the importance of the other crafts. Where these conditions prevail, both the immediate and the general supervision of such work as painting and water service repairs and construction will suffer unless they receive special attention from division officers. Some roads have found it of advantage to provide general supervision for these special crafts by the employment of a general foreman or division supervisor with special training in the particular line for which he is made responsible. This opens up a line of promotion for the foremen under him and also places the work under the direction of a supervisory officer who is equipped to recognize the needs of his particular line and present them to his superiors in the proper light. The current retrenchment of operating expenditures presents another angle of this problem. With reduced activities and reduced forces, especially in the minor crafts, the roads are confronted with a surplus of foremen receiving a rate of compensation in excess of that paid in any time in the past, so there is a natural tendency to reduce the number of them on the payroll.

Because of the importance of adequate supervision it has been suggested that the present offers a good opportunity for revising the form of organization, extending the authority of the more promising of the special foremen over a larger territory with the title of general foremen and salaries commensurate with any increase in responsibility. The lessened activities at present will enable these general foremen to become thoroughly adjusted to their new positions by the time that work is again on a normal basis so that they will be enabled to exercise general supervision of the special

crafts in a manner that will be of unquestioned benefit. Undoubtedly, the form of organization in vogue on some railroads will not permit of the adoption of this modification in supervisory arrangement, but the need of improvement in supervision in all departments of the railroads is such that a plan such as the one suggested should be given serious consideration.

The Labor Readjustment in the Maintenance of Way Department

DURING THE LAST FEW YEARS labor has prospered as never before on the railways and elsewhere. It has taken full advantage of the widespread industrial activity to secure greatly increased wages, a shorter working day and important concessions in working conditions, all of which have added greatly to operating expenses. Within the last few weeks these conditions have undergone a marked change. The widespread industrial depression which has set in has created a large surplus of labor, and this in turn is bringing about reductions in wages and the withdrawal of many of the war time concessions in working conditions.

The railways have not escaped the decline in business; the slump has been acute. Coming as this does on top of the financial stringency created by the withholding of more than \$400,000,000 due them from the government and the holding up of the increased rates by several states, it creates a serious problem for the roads which threatens to force many of them to adopt drastic measures to weather the storm. Under these conditions it is not surprising that they too are considering the possibility of reducing expenses and curtailing their expenditures for labor by both reducing the number of men employed and the rates of wages paid. Under the new Transportation Act the managements are under an increased obligation to the public to operate their properties as economically as possible and this requires that they take advantage of the falling market for labor as well as materials.

One of the first departments on the railways in which a readjustment in labor conditions will be brought about is the maintenance of way department because it is here that outside labor conditions are first and most directly felt. It is therefore not inopportune to consider certain underlying conditions affecting employment here and their influence on the cost of the work done—the final measure of efficiency. In the past most maintenance of way work and particularly track work has been considered unskilled. No recognition has been given to experience and little or no attempt has been made to retain men in the service. They have been "hired" when business was good and "fired" as readily when traffic declined. This lack of permanency of employment, combined with the lowest market wage rate, has in general brought to the roads only the poorest class of labor which did not desire permanent work or which took the work only until other employment could be secured. While we do not believe that the present demands a continuance of the present high wages, the roads can ill afford to reduce their rates to the lowest in the market as they have done in the past. Rather they should stop at some midway point which will enable them to compete on an equal basis with other industries for efficient labor. That such labor can still be attracted to railway work was demonstrated by the influx of native labor on many roads, particularly in the middle west, following the raising of wages in 1918. This is not the time for *minimum* wages for maintenance of way work but rather for a wage which produces a *minimum cost*.

Coincident with the readjustment of wage rates, the present offers an opportunity to replace the drones in the gangs with

workers and to adopt such other measures as will add to the efficiency of the forces, for there are other things besides wages which attract good men into the service. Among these are the readjustment of the working season to increase the permanency of employment and the improvement of living conditions of those employees dependent on the railways for housing and feeding.

Section 10 of the Clayton Law

AFTER HAVING REMAINED inoperative for six years since its passage on October 15, 1914, Section 10 of the Clayton law, which has for its object the regulation of dealings in railroad securities and supplies between companies which have a so-called "interlocking" relationship, became effective on January 1 because President Wilson unexpectedly vetoed a bill passed by Congress to further postpone its effective date. By its terms the law was not to become effective for two years after its passage and because of its unworkable character, and because it was of no particular importance while the government was operating the roads, its effective date has been repeatedly postponed for a year at a time to give Congress an opportunity to amend it. Because of the pressure of other business, and because the law has come within the province of other committees of Congress than those which have been dealing with railroad questions, Congress has failed to give the matter its attention. A substitute, proposed by the Association of Railway Executives, and intended to carry out its purpose in a more practical way has been introduced by Senator Frelinghuysen and Representative Esch, and because it is proposed to make it a part of the interstate commerce law instead of the anti-trust law, it has been referred to the committees on interstate commerce. The Senate committee has already begun hearings on it.

The essential provision of Section 10 is that no common carrier shall have any dealings in securities, supplies or other articles of commerce, or make contracts for construction or maintenance to the amount of more than \$50,000 a year, with another corporation, firm, partnership or association, when the carrier shall have on its board of directors or as its president, manager or as its purchasing or selling officer in the particular transaction, any person who is at the same time a director, manager, or purchasing or selling officer of, or who has any substantial interest in, such other corporation, etc., except on competitive bids, from the bidder whose bid is the most favorable. The law also requires that the carrier having such transactions shall within 30 days file with the Interstate Commerce Commission a complete statement of the transaction and the commission is directed to report violations to the Attorney General.

The commission in October, 1919, issued its regulations prescribing the method of advertising for and securing bids and of reporting the transaction, but they had been held in abeyance because of the repeated postponements of the effective date of the law.

The law as it stands is admittedly unworkable, and it is full of ambiguous and uncertain language, but as it has been interpreted it would interfere with many transactions which it was never intended to reach and a majority of the Interstate Commerce Commissioners have indicated their belief that it should be amended. The purpose of the law is simple and represents a moral principle to which no one can honestly object and to which the railroads are offering no opposition. The purpose is to prevent transactions between a railroad and another company in which any of its directors or officers may be financially interested, to their private advantage instead of that of the railroad. This it seeks to accomplish, however, not by direct prohibition, but by re-

quiring that transactions between companies in which there is such common interest shall be on the basis of competitive bidding.

The great defects in the law are that it tends to restrict dealings in securities which are already completely under the control of the Interstate Commerce Commission under the provisions of the Transportation Act, that it would seriously interfere with transactions between railroads and their subsidiary companies, and that its terms are in many instances vague and uncertain. Probably the most important defect in the law is that it would probably be held to apply, although undoubtedly it was not so designed, to perfectly proper transactions between the component parts of a railroad system, including carrier companies and also separate companies organized by railroads themselves for the purpose of insuring adequate supplies of fuel, ties, ice, etc. The operation of the law for any considerable length of time would make impossible the practice by which large systems buy in quantities for their subsidiary lines and receive in return their securities for capital expenditures. Manifestly the great multitude of such inter-company transactions cannot be advantageously handled under a system of competitive bids which must be advertised for in advance, while a requirement that securities of subsidiaries shall be sold only on competitive bids would tend to break up the control of large systems.

The proposed substitute bill omits reference to sales of securities because another law on that subject is now unnecessary and it also excepts transactions between a railroad and common carrier subsidiaries or non-carrier subsidiaries in which the railroad, either alone or together with other common carriers, has an interest equal to one-half ownership.

The Clayton law is very indefinite as to the kind of dealings between railroads and sellers of supplies which it is intended to reach. It does not define, nor does it make any provision for a definition by the Interstate Commerce Commission as to what constitutes a "substantial" interest in the selling company. A railroad cannot always know when one of its officers or directors may own stock in a company that sells to railroads and whose securities are dealt in on the open market, and it may therefore lay itself liable at any time without knowing it unless it safeguards itself by obtaining competitive bids under the regulations prescribed. Even if it knows that one of its directors has a small interest it cannot ascertain in advance whether that will be considered sufficient to bring the transaction within the law. Neither does it make any provision for exempting purchases of patented articles or articles of such a character that they can be obtained from only one source, or materials and supplies that must be procured quickly in an emergency.

The railroads also object seriously to any requirement that purchases must be made from the bidder whose bid is the most favorable unless this is defined in such a way as to relieve them from the necessity of buying from the lowest bidder, and have inserted in the substitute bill a provision which would give them a considerable degree of business discretion in determining which bid, under all the circumstances, is the most favorable, and also the right to secure more favorable terms by negotiation.

If the best way to repeal a bad law is to enforce it until its disadvantages appear clearly President Wilson may have taken the course calculated to hasten action on the part of Congress to amend the law so that it can accomplish its purpose in a practical way and without needless expenditures on the part of the carriers. The Interstate Commerce Commission is lending its co-operation in the effort to have the law made more workable and the congressional committees which now have the matter in charge have a much better appreciation of railroad conditions than those with which it has been necessary to deal heretofore.

The regulations prescribed by the Interstate Commerce Commission to govern transactions which come within the terms of the law are published elsewhere in this issue.

A Very Significant Contrast

THE AMERICAN PUBLIC may not know it, but it is deeply concerned in the hearings regarding national agreements between railways and their employees which began before the Railroad Labor Board on January 10. They involve many millions of dollars annually that the railways are directly, and the public is indirectly, paying to railway employees who do not earn it. Therefore, the public should not fail to take note of the difference between the ways in which the representatives of the labor unions and the representatives of the railways are presenting their cases. The difference is most significant.

The question under consideration is whether certain national agreements made under government control by the Railroad Administration with certain labor organizations shall be perpetuated. The representatives of the unions contend that these agreements should be continued for the protection of their members. The representatives of the railways contend that they should not be continued because they foster inefficiency and cause the waste of many millions of dollars annually. They contend that efficient and economical operation of the railways requires the making of agreements between individual railway companies and their employees which can and will be adapted to local conditions.

The following are the respective ways in which the representatives of the two sides opened their cases:

The spokesmen of the labor organizations charged that the railroads are controlled by a group of New York banks, trust companies and insurance companies which are dominated by J. P. Morgan & Co.—a charge already threadbare from frequent repetition. They allege that the railroads have sent to outside companies for repair a large number of their locomotives and cars and have paid excessive prices for these repairs. They alleged that the railroads have laid off thousands of men, not to reduce expenses, but to break down the unions. In short, they charged against the railroad companies, their directors and officers almost every crime in the calendar except murder. They then stated that they would make no attempt to substantiate these charges at this time, and wound up by intimating that unless the Labor Board adopts a course satisfactory to the employees "the service rendered to the public would inevitably suffer"!

The public will seek in vain in their statement for any discussion of the principle or effect of national agreements versus local agreements of railways and their employees. It will seek almost in vain for anything which relates to any matters over which the labor board has jurisdiction. The only body which, under the Transportation Act, can officially take cognizance of the charges of railroad mismanagement made is the Interstate Commerce Commission. If the spokesmen of the railroad brotherhoods had thought that they had a case for national agreements they doubtless would have presented it. Since they did not present a case for national agreements they must have thought they had none.

On the other hand, the spokesmen of the railroads proceeded at once in their presentation with a discussion of the question of national agreements and of the facts and arguments which they believe show that the national agreements should not be continued. They said nothing which was not directly pertinent to the matters under consideration by the Railroad Labor Board. They might have attacked the railroad labor organizations for many things. They might have recalled how they "held up" the government of the United States to get the Adamson law passed. They might have

recalled how the railroad brotherhoods threatened to strike just before this country was entering the war with Germany because the Supreme Court did not decide the Adamson law case quickly enough to suit the unions. They might have referred to the efforts the railroad labor brotherhoods have been making to form a federation of labor unions which would be so strong that neither the railroad companies nor the people of the United States could resist it. But they did none of these things. They simply discussed national agreements, which was the subject under consideration by the Railroad Labor Board.

It is not an uncommon thing for a man who has just picked another man's pocket to begin crying "stop thief" in order to divert attention from himself. When a man gets paid for doing work that he doesn't do, or gets two or three or four days' pay for doing one day's work, he is simply "grafting" upon somebody. If he is a railroad employee he is "grafting" directly upon the railways and indirectly upon the public. The national agreements and the interpretations of them which have been made are causing many millions of dollars a year of this kind of "grafting," of which the railways are the immediate and the American public the ultimate victims. The spokesmen of the brotherhoods know that the representatives of the railways are going to lay bare the facts about these matters before the Railroad Labor Board and the public. They want to neutralize the effect of the facts which they know are to be presented. Because the facts about the huge graft of which they are the beneficiaries are to be laid bare, they make wholesale charges of grafting against the railways.

Naturally the railroad brotherhoods want the public to think and talk about the alleged sins of the railroads rather than about their own sins. They have been engaged for years in building up rules and conditions of employment as a result of which their thousands of members have been and still are the recipients of many millions of dollars of "honest graft." Why talk about this, however, when it is so much more interesting and thrilling, and also so much safer for the labor brotherhoods and their members, to shout loudly and recklessly about J. P. Morgan & Company, Wall street and the 25 men, more or less, who are the alleged instruments of Morgan & Company and Wall street in controlling not only all the railroads and railroad equipment companies, but, maybe, all the other industries of this country and the world?

The spokesmen of the employees expressly say they will not try to substantiate their charges "at his time." They were not made to be substantiated. They were made to divert attention from the actual graft obtained by the members of the unions through the national agreements and which the representatives of the railways are prepared to prove, to mere alleged grafting by the railways which the brotherhoods are not prepared to prove.

There was another motive also; the propaganda for the Plumb plan is still being actively carried on. Its advocates consider any and every libel they can spread regarding private management as an effective means of furthering the Plumb plan. There never was a more selfish, unscrupulous, mendacious propaganda carried on than that for the Plumb plan and the attacks now being made by the labor brotherhoods are a part of it.

SAFETY FIRST.—If every man would give a glance, and warn the man who takes a chance; if every man were pennywise, goggles he'd wear to guard his eyes. If every man in chances wild would stop and think of wife and child; if every man could but observe the good that follows steady nerve; if every man, to dodge the ward, would pull that nail from out the board—then we'd all together make safety first.—Charles E. Bradley, S. P. Co.

Letters to the Editor

Recognition of Organizations of Subordinate Officers

COLUMBUS, OHIO.

TO THE EDITOR:

It is coming to be realized more and more by all right thinking men that we are living in a world of strange and unfamiliar conditions. Old land marks and guide posts have been swept away, or obliterated and new and strange signs of the times are to a large degree taking their places, and our future success and security as a nation or as individuals depends upon our ability properly to interpret these new phenomena, or perhaps more properly speaking this new aspect of old phenomena.

In the world of economics we are face to face with conditions for which we have no precedent to guide us. The impoverishment of Europe, the debacle in Russia, the Bank of England reserve below 7 per cent, the great extension of bank credits in this country, and the fact that the value of our farm products has shrunk in the past few months by millions of dollars, and that many of our industries are closing for lack of orders, present a problem or series of problems which will not only require the ablest efforts of the wisest minds, but also the hearty and whole-souled co-operation of all classes of our citizens.

In other words, this is no time to "rock the boat."

Nevertheless, there are many men of great influence in the industrial life of our country who believe that this is the time to smash the labor organizations; acting, in fact, somewhat in the same spirit as the farmer whose barn was burning who should seize on that occasion to discharge the hand with whom he had a difficulty the day before, rather than call him in to help extinguish the flames.

The men above referred to are influential and are finding but little difficulty in building up a considerable following among employers who have suffered from the past excesses of labor unions, and by the mistaken zeal of many chambers of commerce throughout the country.

In the transportation field their activities take the form of opposition to the establishment of railway boards of adjustment, and their propaganda is to the effect that they are fighting the closed shop, when the real truth of the matter appears to be that they are opposed to organized labor as such.

This is plainly indicated by their attitude towards organizations which are not strong enough numerically to make them fear the exercise of their strength in the form of strikes.

For example, the Transportation Act of 1920 set up a class of men known as subordinate officials, who should have under this act the same rights of representation and appeal as those accorded to employees who were members of one of the so-called "standard organizations."

Our organization was named by the Interstate Commerce Commission as one of these subordinate official groups. Notwithstanding this fact, however, we have not as yet been able to get them to accord us the same consideration as an organization which they extend to the so-called "standard organizations," and as one result of this condition the majority of the yardmasters of the United States are still working a twelve or thirteen-hour day for less wage per hour than the yard foremen whose work they supervise.

It is true that our membership is possibly less than 5,000 and that we have no strike vote in our constitution, but if the railway executives were really honest in their contention

that they were working for an open shop rather than engaging in an effort to crush all labor organizations, they would extend to smaller and independent orders the same consideration and treatment which they accord the members of the so-called "standard group."

This is not the time to allow old rancors or old quarrels to darken the judgment. It is a time in which methods of conciliation should be employed to bring the various opposing factors in the industrial world together. A time to make an honest effort to get at each other's viewpoint, and to bring about a condition of hearty and whole-hearted co-operation.

The individual who is hoping to use the present industrial depression to smash labor is a "bear on America." He is virtually betting that present conditions will continue and that there will be depression and surplus of labor for years to come.

He is neither a good business man nor a good patriot. He is merely rocking the boat.

J. L. ELDRIDGE,

Senior Grand Vice-President, Railroad Yard Masters of America.

The Business Basis

NORFOLK, Va.

TO THE EDITOR:

Referring to your editorial note on the Psychology of the Purchasing Agent appearing in a recent issue. The purchasing officer on a railroad is one who should be as intimately acquainted with the financial condition of the property as the owner of a mercantile establishment and should guard his interests in the same way. He has been looked upon so long as an order or requisition clerk that it is hard for most purchasing agents to realize that they are anything else.

The time has come when the supply officer must be looked upon as a financial officer instead of an operating one. The railroads are going through a transitional period which involves a transfer from technical to business operation. The future owners, directors and other officers of our railroads will be primarily business men. When this change is brought about, the financial problem will be for the first time established on a sound basis. Until this is the situation, no economical program of development can be carried out. Equipment and maintenance should be done when business is light and it follows that purchasing should be carried on in periods of depression and only nominal purchases should be made during times of great activity. At such times all equipment should be in use instead of undergoing repairs.

No change can be expected under the present conditions, which are necessarily based on the immediate earnings, until the fundamental facts are recognized, and it is not likely that they will be appreciated until the railroads are owned and controlled by business men and operated as business enterprises.

H. C. PEARCE,

Gen. Pur. Agent, Seaboard Air Line.

THE TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS, Mo., has received from the Post Office Department, Division of Railway Mail Service, at St. Louis, a letter of commendation appreciative of the splendid handling of the mails, through the Union Station, during the Christmas rush. The letter stated further that officials and employees, from the general manager down, are entitled to commendation of the highest character. And that "the operating officials of all tenant lines, by their hearty co-operation with the company and its service, should share equally in the credit that properly belongs to all, and in the satisfaction that comes from a proper knowledge that an important public duty has been so creditably performed."

The Chilean State Railways Are an Open Market

Government Lines Are Adopting American Methods and Standards and Are Well Represented in the U. S.

By John P. Risque

READERS who have followed the accounts of South American railways appearing in these pages from the notebook of the editorial representative of the *Railway Age* sent there to record his impressions, have doubtless concluded, if they were previously unaware of the fact, that the railways on that continent offer, as far as Americans are concerned, a somewhat qualified market for the sale of railway materials. In a general sense, this is the impression which the observer has desired to convey. It is hoped that the account of conditions there has so far been sufficiently truthful and clear



Train on the Arica-La Paz About to Enter Long Rack Rail Section

to cause careful reflection and study on the part of those who plan a railway supply sales campaign in those parts.

The situation in Chile is "no man's land," however, as far as railway supplies are concerned, when compared to the conditions bearing on American prospects of success in the markets of her eastern neighbor, the intensely British developed Argentina.

For convenience, reference is again directed to the map of South America which reveals the Republic of Chile as one of the most singular geographical countries in the world. Long and narrow, it constitutes the Pacific front yard of several of its neighbors, with a coast line nearly 3,000 miles in length, a width of from 65 to 250 miles and an average width of 90 miles. Its total area is about 292,000 square miles; its population, reported to be about 3,800,000, is made up of a hardy race of progressive people. They are, in the vernacular of our own hustling populace, "full of pep" and they exhibit this admirable trait in nearly everything that they do, a characteristic example of which is the extreme pride they take in calling attention to the fact that nearly all of the railways of their country are Chilean owned, in contrast to the European dominated transportation systems of their neighbors. This showing of pardonable pride is manifest on every hand, for Chile is Chile's own, and if the "extranjero" does not sense it as soon as he sets foot in the country, that stranger has missed the first item on the bill.

Two ranges of mountains traverse the country from north to south, leaving between them a great central valley, interrupted at intervals by low branches of these mountain ranges

and by rivers flowing from them to the Pacific. The range between the central valley and the coast is known as the Cordillera de la Costa—or the Coast Range. That to the east is the Andes and is crossed by the Arica-La Paz Railway in the north and the Antofagasta & Bolivia system as well as the Transandine lines to Argentina, the two former railways having been referred to in previous articles

To the railway constructor or the intending cultivator of Chile's important railway supply market, doubtful just as to "where to head for," in his intentions to introduce himself and his proposition personally, a trip direct to headquarters, the seat of government and the center of railway directing activities, Santiago, is advised.

This charming city with almost a half million population lies in a veritable garden spot 125 miles by rail inland from Valparaiso, the country's second city and chief Pacific port, and has an elevation of nearly 2,000 ft. Here he can inform himself fully as to the relative situation on the lines from almost every angle: what to go to see, what he can afford to miss. If he speaks the language of the country, it will facilitate his mission considerably. Not that the Chileans are unable to speak English, for many of them do,—especially the government officials with whom the stranger will

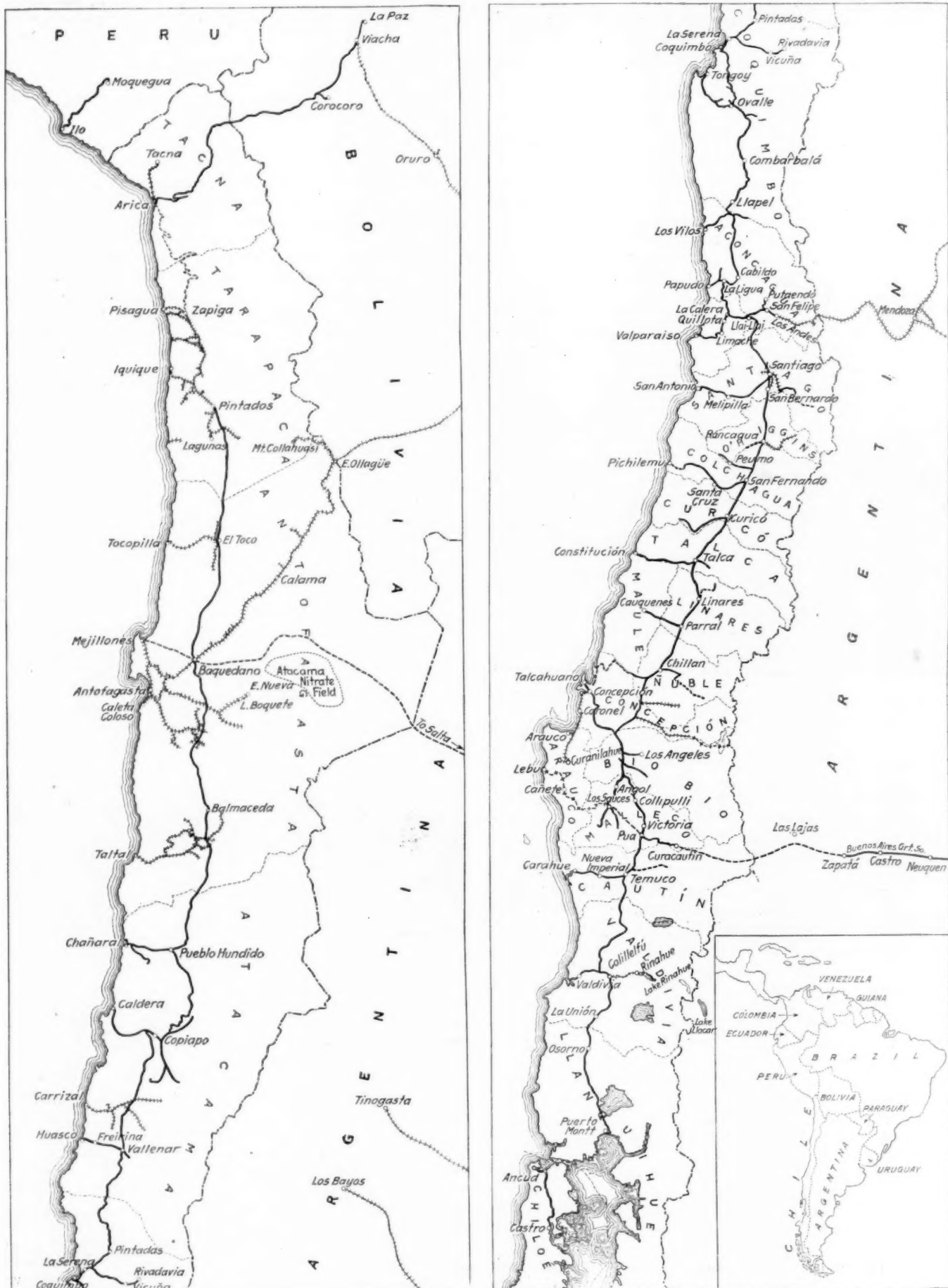


Right of Way Near Frutillar, Chilean State Railways

come in contact. But the familiarity with Spanish is that pronounced asset which promotes an intimacy and a friendship which is an undeniable promoter of a mutually beneficial business relationship.

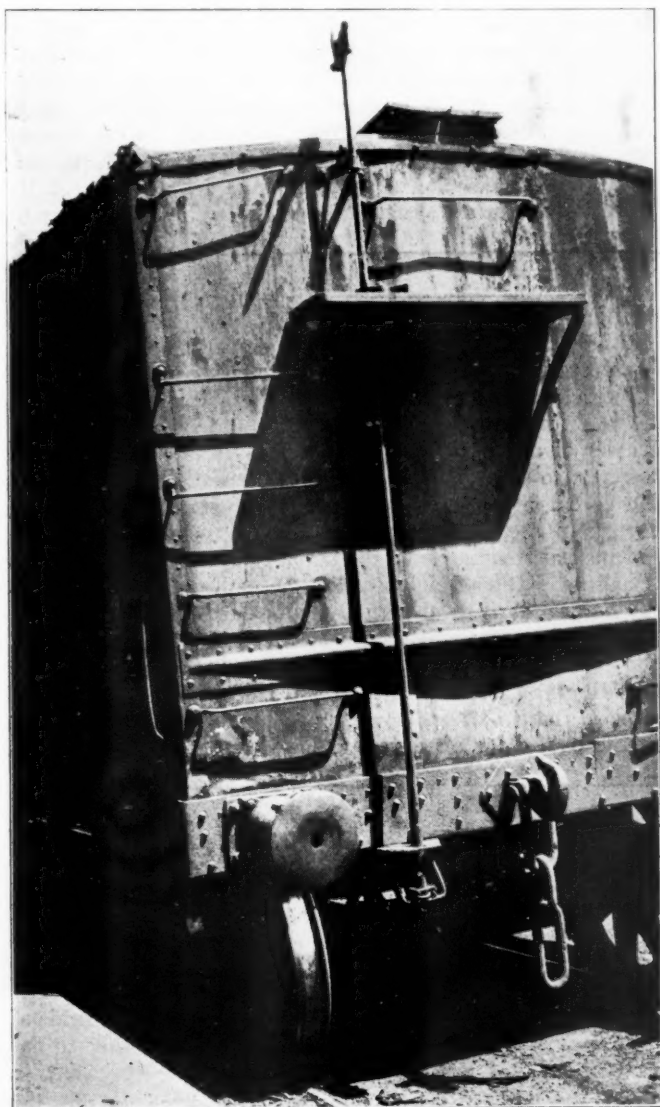
On account of its enormous length, Chile possesses a variety of climates and can be described as comprising four distinct zones as follows:

The northern or desert zone extends 500 miles south from the Peruvian border. Despite its total lack of rain, rivers and vegetation, it is the greatest source of natural wealth of the country, for it is the great nitrate region and it contains also extensive deposits of copper and iron ore. It is very hot and dry and at places in the province of Atacama no rain has been known for over 50 years. The lack of water is so great that some of the mines have to get their supplies in tank cars while others have managed to secure it by extensive aqueduct piping systems. There are several railway lines



The Railway Map of Chile

connecting the nitrate deposits with the seaports from which there are excellent steamship services. Iquique and Antofagasta are the most important nitrate ports and have a population of some 45,000 and 60,000 respectively. They are surrounded by a bare desert, and each receives its water supply through an aqueduct from sources 80 or 90 miles distant. Despite its importance as a port, Iquique has no harbor, and vessels have to anchor a half mile out. Antofagasta is the port of the Antofagasta & Bolivia Railway and the outlet for a considerable amount of nitrate traffic. Taltal, which lies



End of a Box Car on the Chilean State Railways, Showing Details of Construction

about 110 miles south of Antofagasta, is the terminus of the Taltal Railway, which also carries a considerable nitrate traffic.

The second, or mineral zone, extends an additional 500 miles south of the northern zone and is principally a mining center, but there is a considerable agricultural development in the central valley.

The south central agricultural zone is the most populous section of Chile. It includes the most fertile part of the central valley which, in addition to its agricultural products, also produces some coal, certain amounts of minerals and contains large timber areas.

The southern, or island, zone is the southernmost part

of the republic. It contains large sheep raising and forest areas and is thinly populated.

In a similar manner, the 2,195 miles of north and south trunk line, or Longitudinal as it is officially known, can be referred to in geographical sections. Starting in the northern province of Tarapaca, at Pintadas, the lines as far south as Baquedano, a junction on the Antofagasta & Bolivia Railway between Antofagasta and Calama, are operated by private British interests under the name of the Nitrate Railways Company with an approximate mileage of 390. British owned lines connect Pintados with Pisagua and Iquique. Of 4 ft. 8½-in. gage, these railways had, in 1915, 73 locomotives, 53 passenger cars and 1,794 freight cars. From Baquedano south to Pueblo Hundido, a point on the trunk line quite close to the northern border of the province of Atacama, and about half way between Taltal and Caldera, both on the coast, the Chilean government's northern end of the long system is being operated, through recent arrangements, by the British owned Antofagasta & Bolivia Railway. It can be stated, therefore, that the British zone of transportation influence is paramount in the nitrate fields, all the way from the Pueblo Hundido as far north as Pintados, Tarapaca, a zone which contributes more revenues to the state than any other, controlling as it does practically all of the output of the country's bread-winner, as nitrate is known. Official Chilean designation of administration divisions characterizes the operation of the government railways as of three sections. As it is an advantage to be familiar with their local terms, they are referred to in that manner. The Longitudinal Norte (Northern Longitudinal) is the division between Pueblo Hundido and Pintados, the latter point being situated near the northern boundary of Coquimbo. Between Pintados and Calera, the division is known as the Red Central Norte, or the Central Northern System, and Calera will be seen on the map as lying within a few miles of Llai-Llai, a station on the east and west part of the main line from Valparaiso to Santiago. The Red Central Sur, or Southern Central System, includes all of the lines south of Calera to the end of the track at Puerto Montt on the Gulf of Ancud, as well as the relatively short lines on the Island of Chiloe. The following figures, as of 1918, list the rolling stock in use on all Chilean government lines and are official.

Division	Gage	Locomotives	Pass. Cars	Freight Cars
Arica-La Paz	1 meter	30	44	190
Long. Norte	1 meter	26	71	314
Central Norte	1 meter	139	120	1,267
Central Sur	{ 2 ft., 1 meter, } { and 5 ft. 6 in. }	641	506	6,478
Branch, Puente Alto-Volcan	2 ft.	6	11	26
Total equipment		842	752	8,275

All divisions but the Central Sur have baggage cars included in the passenger car totals. To the Central Sur's equipment list should be added 106 baggage cars and 806 miscellaneous cars for special service and not definitely described on the list. The government's statement also shows the amount of rolling stock on all private lines in the country, but this list has been omitted here because, in the sense of this article, attempts to transact business with the owners, mostly British, would likely lead the investigator to remote fields—most likely to London.

It is understood that at present the Chilean government is negotiating in this country for a loan variously estimated at from \$5,000,000 to \$20,000,000, the proceeds of which are to be used for the purchase of equipment for the government railways. Should this financing be arranged, American concerns would probably be enabled to secure the bulk of the orders. The outcome of the parleys between American bankers and the representatives of the Chilean government is, therefore, awaited with considerable interest.

The second installment of this article will appear in an early issue of the *Railway Age*.

Repairs in Outside Shops to Be Investigated

I. C. C. Issues Formal Order; Charges Made by Unions to Commission and Labor Board Denied by Mr. Cuyler

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION on January 6 announced a formal investigation of charges made by representatives of the railroad labor organizations that certain railroads are paying excessive prices for car and locomotive repairs at outside shops. As reported in last week's issue, Chairman Clark had stated at a hearing before the Senate committee in connection with the hearings on the Clayton law that the commission had been making an informal investigation. The order for the formal investigation was as follows:

"It having been reported to the Interstate Commerce Commission that common carriers by railroad subject to the interstate commerce act have caused and are causing certain of their locomotives and other equipment to be constructed and repaired at construction or repair shops other than their own, and have purchased and are purchasing from or through such shops material and supplies used in such construction and repair, at costs in excess of those for similar construction and repairs in their own shops, including material and supplies therefor, in disregard of efficient and economical management, resulting in unreasonable expenditures, and otherwise contrary to law:

"It is ordered, That the commission, upon its own motion and without formal pleading, enter upon a proceeding of inquiry and investigation into and concerning the matters and things above set forth;

"It is further ordered, That this proceeding be set for hearing at such times and places, and that such persons be required to appear and testify, or to produce such books, documents and papers, as the commission may hereafter direct; and that the investigation be carried on in the meantime by such other means or methods as may be deemed appropriate;

"And it is further ordered, That a copy of this order be served upon each common carrier by railroad subject to the interstate commerce act."

A Statement by the Machinists

Following this announcement by the commission, the National Association of Machinists gave to the press a statement stating that W. Jett Lauck, on behalf of President W. H. Johnston of the machinists' organization, had filed with the Interstate Commerce Commission on January 8, or two days after the commission's announcement, a petition asking for an investigation and charging that the big railroads, "especially those affiliated in a financial way with J. P. Morgan & Co., are closing their repair shops, throwing thousands of union men out of work and giving repair work at extortionate rates to large private equipment companies in which railroad capitalists or banking groups are heavily interested." It was also stated that more than 30,000 union men already have lost their jobs under this plan and a combination of figures was built up as the basis for a statement that the railroads are "milking the national treasury of three-quarters of a billion dollars and manipulating the funds in a campaign to drive the railroad unions out of business," and that in this fashion the railroad managements hoped "to send the unions on the rocks and charge the bill to the public through taxation to pay the subsidies guaranteed by the federal government or by maintaining present high rates to shippers and the traveling public."

Neither the press statement nor the petition explained that the car and locomotive repair work was sent to outside

shops during the guaranty period during which, under the law, the railroads will be allowed to charge to maintenance expenses for the purpose of figuring the guaranty only an amount to be determined by the Interstate Commerce Commission, nor that most of the lay-offs of shop employees referred to occurred at a later period, after the volume of railroad traffic had been greatly reduced. The petition stated that locomotive repair work when done in the outside shops costs the railroads on an average four times as much as it costs in their own shops. The arithmetic was not explained, but it was stated that since locomotive repair work of the entire transportation system of the country amounts annually to between \$500,000,000 and \$600,000,000 the effect would be to burden the general public with an excessive and unwarranted charge of at least half a billion dollars a year. Similarly, it was stated that the cost paid by the railroads for the repair of cars by private companies amounts to at least \$600 a car and if "the Class I carriers alone" would have their repairs done by outside companies on this basis the bill for repair of freight cars would be increased one-quarter of a billion dollars a year. No attempt was made, however, to state that the railroads are having all their cars and locomotives repaired outside. It was stated that data have been secured which show that representative railroad systems have contracted with outside concerns for the repair of at least 50,000 freight cars. The petition says in part:

"We realize fully that your honorable body has no jurisdiction over industrial relations in general or over the relations between railway employees and railway managers. We do claim most emphatically, however, that you cannot permit railroad companies under your jurisdiction to take funds paid by the public for effective transportation machinery, and to use these funds illegitimately and indefensibly for the purpose of disrupting the organizations of railway employees which received government sanction and commendation during the war.

"It is for this reason that we petition you for a complete investigation and hearing. We are prepared to submit to you the facts which we have already collected and which we feel assured that your own records and inquiries will verify. When there has been a complete ascertainment of the facts, and we are afforded an opportunity, we hope to urge in detail for your consideration the following policy in order to correct the evils of which we complain:

"1. That no railroad company be permitted to enter into contracts for repair work on locomotives or cars by outside companies unless given a permit to do so by your honorable body, and

"2. That as a condition to securing such a permit, the railroad companies must show: (a) They cannot do the work which they wish to contract for, or (b) They cannot do it at as low a cost as they can have it done by outside companies, and, (c) If a permit is granted, that the same rates of compensation and the same conditions of employment will be observed by the contractors as are recognized and guaranteed to railway workers by the Transportation Act of 1920, and the Awards of the Railway Wage Board established by this Act."

Later another statement was given to the press quoting Mr. Lauck as to the alleged actual records of contracts for repairing 617 locomotives and about 32,000 cars during the past several months. The total cost for repairing 350 en-

gines in the outside shops was stated to average \$18,026 per locomotive and this was compared with statistics of the Railroad Administration as to the average cost of repairing 1,080 locomotives in company shops during August and September, 1920, which were said to show an average of \$5,096 each. It was also stated that the cost of work done by the large companies averaged much higher than that done by the small concerns. The following table was given as showing a comparison between railroad and private shop costs on the basis of the data secured by the railroad shop organizations and those ascertained by the Railroad Administration:

COST OF LOCOMOTIVE REPAIR WORK BY PRIVATE COMPANIES AND COST OF SIMILAR WORK IN RAILROAD COMPANY SHOPS IN AUGUST AND SEPTEMBER, 1920.

Number of Locomotives	Name of Company Doing Work	Total Cost	Average Cost Per Locomotive
234	Baldwin Locomotive Works.....	\$4,691,176	\$20,048
27	Rome Locomotive Company.....	459,000	17,000
41	American Locomotive Company.....	670,760	16,360
9	Lima Locomotive Works.....	149,535	16,615
11	Charleston Dry Dock Company.....	66,000	6,000
9	Southland Steamship Company.....	54,000	6,000
10	Merrill & Stevens.....	120,000	12,000
6	Broad Foot Iron Works.....	72,000	12,000
1	Pittsburgh Boiler & Mch. Co.....	1,670	1,670
2	Manufacturers Railway Shop.....	25,080	12,540
350	Total and weighted average.....	\$6,309,221	\$18,026
1,080	Railroad Company Shops.....	\$5,504,144	\$5,096

In this statement it was stated that the locomotive repair bill under the private contract system would be raised from \$500,000,000 a year to \$1,500,000,000 annually and the car repair bill from \$400,000,000 to \$800,000,000, a total increase of \$1,400,000,000. A portion of this statement follows:

"Of the 617 repair jobs, 418 were awarded to the Baldwin Locomotive Works, which is closely affiliated with the banking group controlling the railroads. The exact cost is given for repairing 234 of these, the aggregate being \$4,691,176, averaging \$20,048 per locomotive. In other words, to have this work done by the Baldwin company costs nearly as much for 234 engines as for 1,080 similar jobs done in the railroad shops. Seventy-seven engines repaired by the American, Lima and Rome locomotive companies, all large concerns, averaged well over \$16,500 each, while one job done by the Pittsburgh Boiler & Machine Works, a small company, cost only \$1,670, and repairs to 20 locomotives by two other medium sized companies averaged \$6,000.

"More specific, however, is the comparison of the actual cost of a certain type of repair job in the railroad shop and in the private shop. The Railroad Administration very accurately classified the various types of repair jobs and ascertained the average cost of each class in the shops of the different railroad companies. For example, it found that the cost of doing certain work in the shops of the Pennsylvania Railroad in September, 1920, averaged \$4,466 per locomotive. For doing exactly the identical work on 220 of its engines, however, the Pennsylvania Company paid the Baldwin Locomotive Works \$19,057 each, more than four times the cost.

"Similarly, the New York Central farmed out 27 jobs with the Rome Locomotive Co., 41 with the American and 9 with the Lima, the costs ranging between \$16,360 and \$17,000 for each locomotive, whereas the average cost of the same work in the New York Central shops in 1920 had been \$5,773, or about one-third the amount.

"While the exact charge for the work done at 'cost plus' has not yet been ascertained, it is plain from the terms of the contracts that the cost will be very much more than if done in the railroad shops, and quite likely will exceed the extremely high costs cited above. Cost-plus contracts between the Baldwin company and the New York Central, the Seaboard Air Line, the Burlington, the Milwaukee, and other roads, stipulate that in addition to cost of materials

and labor, 110 per cent shall be added to the labor cost (which is usually from one-half to two-thirds of the entire cost) for overhead, and to the total cost thus computed an additional 15 per cent will be added for profit. The Davenport Locomotive Company, in contracts with the Burlington and other roads, provides for the addition of 5 per cent to material cost, 125 per cent to labor cost, and then takes 20 per cent of the total cost as profit. The contracts of the Rome Locomotive Company provide for similar percentages.

"Similar practice with regard to repair work on freight cars has been far more extensive than for locomotives, although it has not been possible to secure as accurate information as to comparative costs in individual instances. Nevertheless, definite figures have been obtained showing that important trunk lines have contracted with private concerns for the repair of at least 32,000 cars of various types. Information as to other contracts has been received, which, however, do not show the number of cars covered. A conservative estimate of the total number would be 50,000. The Baltimore & Ohio alone has had 12,800 cars repaired by the American Car & Foundry Company, the Ralston Steel Car Company and similar concerns, and the latter company contracted with the Norfolk & Western for the repair of 9,000 of its cars. In fact, the Ralston company's contracts cover 11,500 of the 32,000 cars of which we have record.

"A careful estimate made by experts shows that the repair work for which the Ralston company is being paid at the rate of about \$1,800 per car could be done in the company shops for approximately one-half of this amount, or \$900. It is safe to say, therefore, that the excess cost of having these 32,000 cars repaired by private concerns will total \$28,800,000. If the estimate of 50,000 cars is correct, the aggregate excess will be \$45,000,000.

"This is only one phase of the situation, the other (in which we are even more vitally and directly interested) being the starving out of the machinists' organization in railroad shops, which is a preliminary to a drive which will be made upon all railroad labor organizations, and is one part evidently of the nation wide anti-union campaign admittedly being waged by the group of capitalists centering about the Morgan banking system and its affiliated industrial and transportation concerns, of which the U. S. Steel Corporation is one of the most active."

Railroad Repair Contracts Criticized

in the House of Representatives

Practically all the data regarding the cost of repairs, as included in the statements of the machinists' union, were brought out in a speech by Congressman Huddleston of Alabama in a recent speech in the House of Representatives. In the report of the speech contained in the Congressional Record, a tabulation of contracts for repairs to locomotives and cars is shown with a further statement of the cost of classified repairs in certain railroad shops. The data regarding repair contracts show that the cost per locomotive ranges from \$1,670 to \$30,275.70. Practically no information is given as to the extent of the repairs. The work done in railroad shops is subdivided under the various classes of repairs, the cost being as follows:

Class 1.....	\$26,069.23 (one road only)
Class 2.....	8,195.64 to \$14,498.14
Class 3.....	4,471.66 to 10,658.39
Class 4.....	2,093.71 to 4,576.11
Class 5.....	1,002.09 to 4,025.45

Mr. Huddleston also presented a table listing the members of several prominent financial institutions that were represented on the boards of directors of about twenty railroad equipment builders and supply manufacturers.

Practically the same charges made in the petition to the Interstate Commerce Commission were presented by B. M.

Jewell, representing the American Federation of Labor, at the Railroad Labor Board hearings in Chicago on Monday last.

Association of Railway Executives

Replies to Labor Leaders

On Tuesday, Thomas DeWitt Cuyler, chairman of the Association of Railway Executives, issued an official statement in which he denied the charges of labor leaders that railroads were paying excessive costs for equipment repairs as an attempt to deceive the public. Mr. Cuyler's statement reads as follows:

"At the very moment when real progress is being made in securing harmony and co-operation between the railroads and their employees, statements are being made to the public, which, whether intended or not, will impede these steps of progress, and if such statements are accepted without question, utterly deceive the public as to the facts.

"The Interstate Commerce Commission has ordered an inquiry into the subject of railroad repairs. The Railroad Labor Board has just started a hearing in Chicago on the subject of railroad working conditions. The railroads are co-operating with the Interstate Commerce Commission and with the Railroad Labor Board in an effort to arrive at the facts, and the proper conclusions to be drawn from the facts.

"In spite of this, W. Jett Lauck, on behalf of the machinists' union, issued to the newspapers from Washington, on Sunday, an inflammatory statement; yesterday, in opening the hearings before the Railroad Labor Board in Chicago, B. M. Jewell made another speech of the same character, utterly extraneous to the subjects under consideration; and today, Mr. Lauck from Washington, issues another statement full of insinuation and false conclusions.

"These it would seem are evidences of a concerted movement to appeal to the public over the heads of the Interstate Commerce Commission and the Railroad Labor Board, and to confuse the effort to deal with the subjects in controversy in an orderly manner. The public should be on its guard against such obvious propaganda.

"The railroad companies are preparing to present under oath the facts concerning equipment repairs to the Interstate Commerce Commission. From the facts available to me, I am confident that the investigation of the commission will confirm the following statements:

"1. Under the Transportation Act, the railroads are bound by rigid restrictions as to what they may pay out for repairs and maintenance.

"During the period covered by most of the so-called excessive charges, the railroads were guaranteed net earnings equal to those of the federal control period. For this guar-

anty period the law specifically excludes all unusual or disproportionate charges. For the period since September 1, the law limits railroad expenses to such items as may be justified 'under an honest, efficient and economical management, and reasonable expenditures for maintenance of way, structures and equipments.'

"It is manifest that for a railroad to incur improper charges for repairing its equipment would invite loss of earnings the company has every motive to conserve.

"2. The work given to outside shops was given last spring and summer when the capacity of the railroad shops was absolutely exhausted; the railroads are not now giving repair work to outside shops and depriving railroad employees of the work unless for reasons of economy or speed; such reductions in forces as are being made in railroad shops are the result of falling off in business.

"3. The figures quoted as to the relative costs of repairs in railroad shops and in outside shops are misleading for the following reasons:

"(a) The costs charged against repairs in railroad shops include no charges for interest on investment, depreciation, overhead expenses. Private companies must include such items in their costs.

"(b) Average costs in railroad and outside shops are not comparable for the reason that in order to conserve capacity and to secure the greatest possible results in the quickest possible time the railroads placed with the locomotive building companies a large amount of their heavy repairs, reserving for their own shops the lighter grade of work.

"(c) The vitally important factor is that it was necessary to get the work done at the earliest possible moment; and the railroads secured from the outside firms the best terms obtainable to get the job done.

"4. When the railroads were returned to private operation there was an abnormal percentage of cars and locomotives in bad order requiring repairs. The excess of bad order equipment was beyond the capacity of the railway shops, and the railway labor engaged in the repair of cars had declined in efficiency and output. These abnormal conditions required abnormal remedies to meet them. It was a matter of time and economy to utilize all the facilities of the equipment concerns of the country for these repairs.

"5. That there is absolutely no truth in the charge that banks and railroad companies are in a 'conspiracy' against labor, the 'open shop,' or upon any other controverted point.

"A half truth is as bad as a whole lie. The statements referred to have been given a deceptive plausibility by the clever use of half truths. The whole truth will be ascertained by the Interstate Commerce Commission, and the public advised by that body as to the facts."

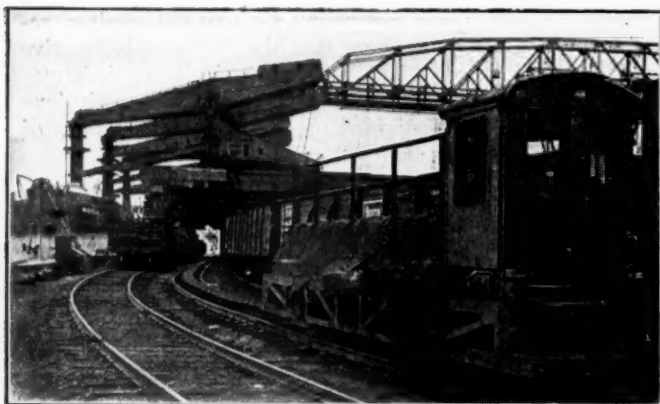


Photo by Ewing Galloway

Ore Docks on the Lake Front at Cleveland



Photo by Ewing Galloway

New York Central Docks at Weehawken, N. J.



Looking Down One of the Transverse Trucking Bridges Which Connect the Track Platforms

Operating a Modern Freight House Efficiently*

Practices Adopted at New Orange Avenue Freight House of
New York Central at Cleveland

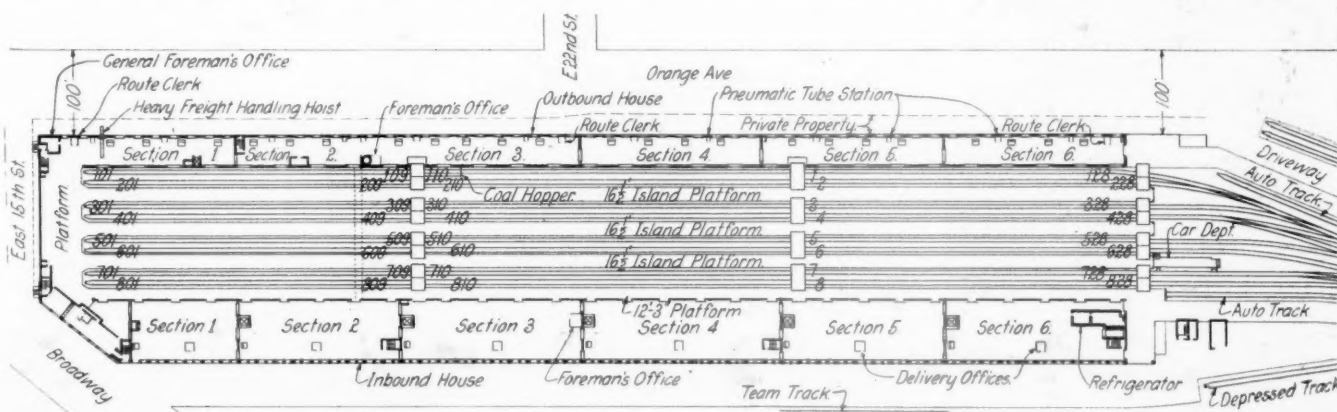
By W. E. Phelps

Assistant Engineer, New York Central, Cleveland, Ohio

IN MARCH, 1918, the New York Central completed at Cleveland, Ohio, its large Orange Avenue freight terminal, which had been several years in building and on which several millions had been expended to produce a plant combining the greatest convenience to the public, exceptionally efficient operating conditions, and an unusual regard for the comfort of its employees. When the new terminal was

served, while the new plant is less than a mile from the center of the business district and on a level with it.

The terminal as a whole, comprises a $3\frac{1}{2}$ -mile branch from the New York Central's Cleveland belt line and includes, besides the double-track connecting line, a 1,000-car storage and classification yard and the 35-acre terminal yard proper containing the team yards, which will have about 550



Floor Plan of the Freight House in Relation to the Track Layout

opened, three outbound and three inbound l.c.l stations, and one team yard, were closed, and all the business was consolidated at the new location. The stations abandoned were largely outgrown and poorly located, 50 or 60 ft. below the level of the business and manufacturing district which they

served, while the new plant is less than a mile from the center of the business district and on a level with it.

House and Track Arrangement

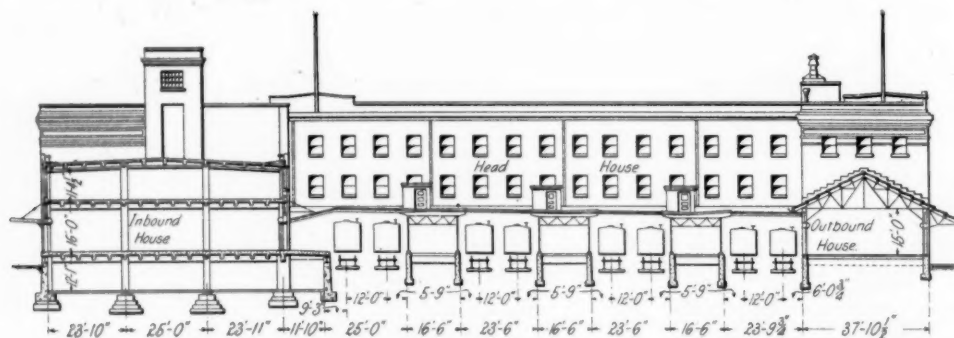
The team tracks range in length from 10 to 30 cars, with driveways 40 ft. or 37 ft. wide, the narrower dimension having been finally determined on as standard. They are largely

*The engineering features involved in the design and construction of this large local freight terminal were described in the *Railway Age* of July 19, 1918, page 117.

paved with good second-hand paving stone (on a 6-in. concrete base) removed from the many streets which were vacated or changed to permit construction of the plant.

The 38-ft. outbound house, and the 75-ft. inbound house are each 1,262 ft. long and stand opposite each other, 156 ft. apart, with the space between them occupied by a 12-ft. 3-in. platform along the inbound house, and four pairs of tracks separated by three 16-ft. 6-in. roofed-over island plat-

into three sections of 9, 10 and 9 cars each by the bridges, so that the eight tracks have a total capacity of 224 cars. With the tracks cut into these short sections, the bridges provide easy access to each platform at intervals, and with a platform (or house door) adjoining each car, door-to-door spotting of cars is entirely unnecessary. The designated number of cars for each track is simply set in and cut for the bridges. As a result of this and the modified "permanent



Cross-Section Through the Freight House Layout, Looking Toward the Head House

forms. There is no platform along the outbound house, the track-side doors of which are 19 ft. wide and 42 ft. apart, center to center. The two houses and the platforms are connected across the west end by a basement-and-three-story headhouse. The main floor of this comprises a platform 50 ft. wide, while the upper two stories, which extend also around over 296 ft. of the outbound house, contain the house offices, record room, employees' cafeteria, recreation rooms, etc.

For operating purposes, the houses and platforms are also

set up" of outbound cars, described later, the house is pulled and set up with unusual rapidity.

"Spot" Numbering System

Freight is handled between cars and trucks all on one floor, the tracks and the streets surrounding the houses being on the same level. The inbound house has full length basement and second floors, reached by seven large elevators; dirty and rough freight, like oil and barrels, baled rags, etc., is placed in the basement, and furniture on the second floor, but most



Interior of the Inbound House Showing the Use of the Lift Truck Trays

connected laterally at the east end and at two intermediate points by three sets of wooden bascule-lift bridges 16 ft. wide, which are raised and lowered by hand. Signal lights, suspended from the roof above the bridges, automatically indicate to trainmen whether they are up or down: continuous-burning red light signals are also shown over the bumping posts at the ends of the eight house tracks.

The house tracks are of 28 cars capacity, and are divided

of the freight is handled on the first floor; fundamentally this is a "one-level" station, as distinguished from some stations recently built in which tracks and driveways are on different floor levels. In the outbound house there are 55 driveway doors, with an automatic five-ton dial scale located between each pair of doors, while the inbound house has 110 driveway doors, with six scales.

The "spot" numbering system for cars at the house gives

the westerly car on each track the number 01, and running from that up to 28 for the easterly car, while each position number is prefixed by the track number, as 101 to 128 for the cars on Track No. 1, 201 to 228 on Track 2, etc. Thus the same position numbers are directly opposite on all tracks, and the system is easily assimilated by the men. Prominent signboards permanently posted on the platforms opposite each car space indicate the numbers.

The equipment used for hauling the freight between houses and cars comprises about 600 four-wheel trailers with 18-in. main wheels, about 40 low-down all-steel trailers for handling barrels, etc., and a number of new-type dollies. The standard type trailers have 3-ft. by 6-ft. platforms, rigid



Outbound Train Handling Special Equipment Used for Hauling Awkward Pieces of Freight

hook couplers, and are equipped with removable pipe or T-iron gates. The earlier types of these trailers were of the usual wooden construction, but 175 recently purchased and put into use are of all-metal construction (except floor), with Hyatt roller bearings, and possess the unusual feature of spring suspension for all four wheels, primarily a floor-saving measure, as well as a spring drawbar device.

Among the dollies are two special types of Stuebing trucks: one a six-ton capacity dolly 9-in. high, with large wheel faces, spring suspension and roller bearings, with a bed of rollers set into the frame, for handling heavy machin-



Typical Trailer Train—Outbound House, Showing Covered Trucking Bridges

ery by rolling on or off: the other a cradle caster type for handling the many shipments of long shafting or forgings with special reference to easy handling into the car.

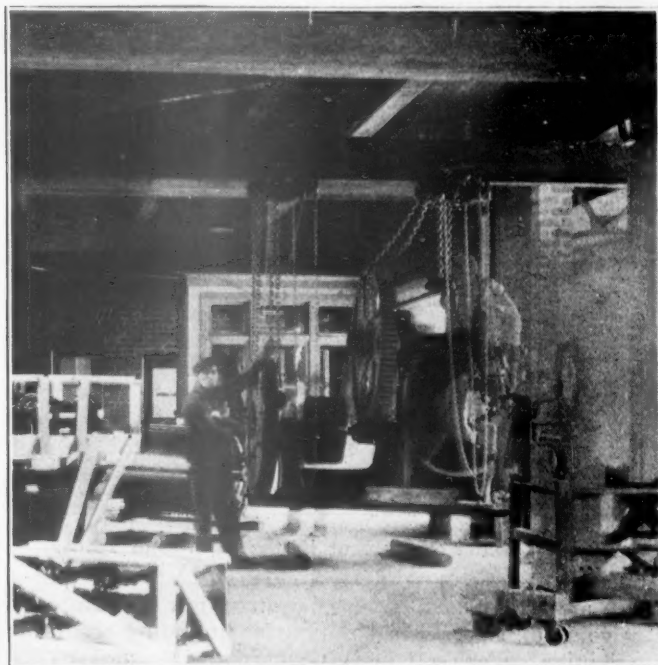
Eight Mercury tractors, seven small three-wheelers with 30-cell Edison batteries and developing a 600-lb. drawbar pull, and one larger one for handling heavy machines, etc., are the motive power for hauling this freight and equipment. Their batteries are charged at night and given a heavy boost at noon. Trains vary as to the number of trailers, and range as high as 18, the average being about 10. In both houses the crews consist of the motorman and a trainman, the lat-

ter's duties being to couple and uncouple trailers, watch his train to prevent freight from falling, etc.

A Separate Organization for Each House

The house organization, under a general foreman reporting to the agent, consists of two entirely separate units, one for each house and each under a foreman. There are many differences in the handling of the two kinds of freight and some unusual methods are used in each house, so they will be described separately.

A driver with freight for outbound shipment goes first to any one of three route clerks with his bills: these clerks, in conveniently located special booths in the house, have all the requisites, including experience, for properly routing freight. They mark one copy of the bills with the spot number of the car into which the freight is to go, and return it to the driver, together with a ticket showing the number of bills, time of arrival at the house, etc.; the driver then goes to the indicated door and the checker, after transferring the freight onto trailers, chalks it with the spot number shown on the bills, and his symbol letter, and "OK's" the ticket which



Receiving Heavy Machinery with the Help of an I-Beam Runway at the Door

enables the driver to secure his receipted freight bills from the route clerk. This ticket is also marked to show the time of surrender, thus giving a record of the elapsed time at the station. The checker also marks on the ticket the time he started and finished handling the load.

The average loading per trailer at this house is about 1,330 lb., an exceptionally high figure which is accounted for by many metal products, including auto springs, hardware, bolts, nails, wire, rods, bars and plate, and quantities of paints and oils, manufactured in Cleveland. Outbound heavy steel products, machine tools, etc., are transferred from trucks by a freight hoist consisting of an I-beam runway extending 9 ft. out over the driveway, and 26 ft. back into the house, on which are two four-ton, geared trolley hoists, which can be worked separately or together, and easily handle the heaviest loads acceptable at the house, onto whatever equipment is needed for moving them to the cars.

The loaded trailers in each section are lined up in train order and pulled by tractors onto the proper platform, the rear trailers being cut off one by one as they pass the proper

cars. After all the loads have been cut off, the tractor gathers a train of empties which have been partially assembled by the stowers to take back into the house. No trailers have freight for more than one car—there is no "peddling." As soon as the freight has been pulled off the floor, the checker "shoots" his bills to the office by means of a pneumatic tube system, for rating, billing, etc.

On the platforms, a head stower in charge of an entire platform, shifts his men from point to point as necessary to prevent congestion at any one place, and supervises the loading generally.

To minimize the back-hauling of freight which is taken out on a platform, marked for a car which is found to be full when the freight reaches it, about a dozen telephones connected with the house exchange have been placed on the platforms, enabling a stower to notify the foreman promptly when a car is filled, and a special system of "despatchers" phones to each route clerk's and checker's booth allows the foreman to notify these men quickly of this condition. A bulletin board on which each route clerk's, checker's and stower's loading errors are charged up to the individual develops considerable rivalry among them.

A flexible "permanent set-up" is used for outbound cars,



Typical Trailer Movement in the Outbound House

which are arranged in "groups," a group being a number of cars going to one principal station for unloading or further distribution. Each group is permanently assigned to one position on the house tracks, but the assignment of cars within the group is elastic, within the foreman's discretion. This elasticity obviates the necessity of switching set-backs onto precise spot locations and also permits making extra cars without disarrangement of the set-up, at the same time giving nearly all the advantages of a strictly permanent "set-up." Cars are all set at night. The first train of outbound house freight leaves the yard about 45 min. after the house closes, and the second train soon after.

Handling Inbound Freight

In the handling of inbound freight the methods are somewhat analogous, but differ materially in detail. Each firm regularly receiving sizable quantities of freight is assigned a certain space in the house for its freight, the space being marked by suspended signboards, but two of the six sections are assigned to smaller and less regular consignees whose freight is sorted and piled alphabetically according to initial. Thus each consignee's freight is always all together and is always found at the same place in the house, which is a great advantage in reducing confusion.

Tallymen at the cars load all freight on trailers to the different sections, loading them to capacity with any number of lots of freight. They are then hauled by tractor to the

indicated section, and the piler in the section distributes it as necessary. When the lots are large enough to justify it, and the size and shape permit, the freight is piled directly from the trailers onto 3½-ft. by 5-ft. lift truck platforms awaiting delivery. About 400 of these platforms are in use, equipped with stake pockets for use when necessary. One Stuebing 5,000-lb. (hand) lift truck in each section is used to move these loaded platforms to the door for delivery, one man doing it quickly in one easy operation. These platforms and trucks not only speed up delivery and save labor, but are conducive to cleaner and closer piling, and thus save room, this being a valuable feature; it is rather startling to consider that in ordinary freight house operation, according



Some of the New Equipment

to figures from many houses, the floor space occupied by a ton of freight awaiting delivery, figured at fair rental rates, costs close to 20 cents.

A large refrigerator room is maintained for the storage of perishables awaiting delivery or shipment, and facilities are provided for icing a small number of dairy cars. Two tracks are regularly assigned for inbound freight and are set at night and as often during the day as necessary. A comparatively small amount of transfer work is done in connection with the inbound freight work.

The yards are piped for air, and light repairs are made



Loading a Four-Ton Casting on An All-Steel Roller Top Dolly Truck

and air brakes are tested and cleaned as the cars stand at the house for loading or unloading. A car repair shop is also maintained at the classification yard.

Fire drills, with adequate apparatus, are had frequently, and considerable attention is given to fire prevention work. All employees are provided with individual steel lockers and a high class cafeteria and a recreation room are maintained in the office portion of the building, while the house men have a comfortable basement dining room and lounging room, the only place in the house where smoking is permitted. Employees in the house are required to wear badges.

GROUP LIFE INSURANCE for its employees is to be continued by the General Electric Company for another year. During the first year of the insurance plan about \$257,500 in death benefits were paid.

Hearings on Substitute for Section 10 of Clayton Act

Majority of Commission Approves Underlying Principle of Section 10 But Favors Some Modifications

WASHINGTON, D. C.

HEARINGS ON THE FRELINGHUYSEN bill, S. 4576, which was drafted by Alfred P. Thom, general counsel for the Association of Railway Executives, as a substitute for Section 10 of the Clayton act, were begun before a sub-committee of the Senate committee on interstate commerce on Wednesday, January 5. Chairman Clark and Commissioner Meyer of the Interstate Commerce Commission testified briefly, saying that a majority of the commission approved the underlying principle of Section 10, but think that some modifications should be made in it, while some of the commissioners think it should go into effect subject to such changes as necessity for may develop later. They said the commission had had nothing to do with the form of Section 10 and had had no opportunity to discuss the matter after they had been notified that hearings would be held. Commissioner Meyer said that he and Chairman Clark had gone over the substitute bill tentatively and it had seemed to them that the entire effect of the law would be nullified by the insertion of the language to provide that it shall not deprive a carrier of the right to exercise an honest business discretion in determining which bid, under all the circumstances, is the most favorable, nor to prevent it, after having taken competitive bids from doing business on some other basis. Under this provision, he said, a railroad might take bids and then make a separate bargain, as is done commonly in other lines of business and to a certain extent in the railroad business. Commissioner Meyer also said he saw no reason why companies should be allowed to charge supplies against subsidiaries for more than the market price under any condition. The bill provides for the approval of a different price by the Interstate Commerce Commission. The bill provides that a common carrier having such dealings as are required by the law to be made by competitive bidding shall preserve in its office, for such time as the commission shall require, a complete record of the transaction, subject to the inspection of the Interstate Commerce Commission. This, Mr. Meyer said, would throw upon the commission initial responsibility for examining the various bids and records, which would place upon it a great responsibility in connection with the hundreds of thousands of such documents and might result in an "inferior" kind of inspection.

The bill provides that whenever the commission shall, after investigation or hearing, have reason to believe that the law has been violated, it is authorized to refer the matter and its own views or findings thereon to the attorney general. Mr. Meyer thought the commission should be authorized to make recommendations to the attorney general as to certain transactions clearly not against the public interest, although technically in violation of the law.

Chairman Clark said he thought he spoke the consensus of the views of the commissioners when he said that such transactions as the law was really aimed at should be prevented and that even if the law did not reach actual transactions the moral effect would be good, but he pointed out several objections to the Clayton act as it stands and said that it is not in harmony with some of the provisions of the Transportation Act. He pointed out that Section 10 does not prohibit common directors, but merely requires competitive bidding on transactions in which common directors or officers are involved. He also said that the Transportation Act contemplates consolidations, whereas the Clayton act would prevent many transactions in securities between companies in a

single system by the requirement that the dealings in securities must be on competitive bids. He also pointed out that the Transportation Act gives the commission control over the issuance of securities and a degree of control over expenditures by the provision that it shall make rates designed to produce a certain return only under conditions of honest and economical management. He said there ought to be a reasonable limitation on the possibility of improper dealings, but that it should not be so extreme as to stand in the way of carrying out the purpose of the Transportation Act. He agreed with Commissioner Meyer that the language intended to give the railroads discretion would nullify the rest of the bill. Mr. Clark said he believed in the principle of the Transportation Act as it applies to consolidations because the grouping of railroads into fewer larger companies would make possible more economical and efficient operation, give better public service and make possible better regulation. He thought it was in the public interest for a parent company to purchase supplies for its subsidiaries in large quantities, but said that they should be sold to the subsidiaries at the price at which they were purchased. He did not think that a parent company should be required to bid in the open market for the securities of its subsidiaries. Mr. Clark also pointed out that if there is extravagance or even graft in connection with the purchase of supplies or of securities Section 10 would not reach it unless common directors or officers were involved.

Senator Townsend called Mr. Clark's attention to a speech made in the House last week by Representative Huddleston, in which Mr. Huddleston presented a memorandum, evidently prepared for him, charging that railroads are paying excessive prices for locomotive repairs in outside shops as compared with the cost in railroad shops. Chairman Clark said he imagined the memorandum was the same or came from the same source as information which had been furnished to the commission some weeks ago. The commission had started an informal investigation and it had had the accounts of two roads checked up. It seems to be established, he said, that the cost of the repairs of these locomotives has exceeded that of work done in the railroads' own shops. The commission had asked the presidents of some of the roads for an explanation. In one case the reply was that the figures as to the cost in outside shops were not accurate, because they represented only preliminary estimates. In some cases the contracts were made on a cost-plus basis. Some of the railroads had replied that the figures did not represent a fair comparison because the cost figures for the railroad shops did not include overhead, interest or depreciation. Others said that they had paid more for repairs in outside shops, but they had felt justified in incurring the additional expense because they needed to have the repairs made and were not able to perform the work promptly themselves. Except for two roads, Mr. Clark said, the commission's investigation is not yet complete, and while the figures received are "significant and illustrative," they require further investigation. It still remains to be established, he said, whether any interlocking relation was involved between the railroads and the companies doing the work outside, but the commission is going into the matter thoroughly with the purpose to get the exact facts.

Alfred P. Thom, general counsel for the Association of Railway Executives, and S. T. Bledsoe, general counsel for the Atchison, Topeka & Santa Fe, testified before a sub-

committee of the Senate committee on interstate commerce on January 6 and 8 that the effect of Section 10 of the Clayton law would absolutely break up the system by which railroad companies purchase materials and supplies for their system lines and receive in return securities of the subsidiary companies. The requirement that competitive bids must be received on dealings between companies having common officers or directors, they said, would make it impossible for the parent company to buy supplies in large quantities for all its subsidiaries and would also subject it to the danger of losing control of the subsidiaries. They declared that they were in sympathy with the underlying principle of the Clayton act, but that amendments such as are proposed by the Frelinghuysen bill are necessary to make it workable. This bill does not apply to transactions in railroad securities because the Interstate Commerce Commission has been given complete power to regulate security issues by the transportation act.

Mr. Thom pointed out that the railroads have persistently sought to have Congress amend the law before its effective date, without interfering with its prohibition of improper transactions, but that Congress has been so pressed with other matters that the subject had not been considered on its merits before the effective date arrived. One reason was that the matter was not of importance while the government was operating the railroads. He also said that the President had vetoed the bill to again postpone the effective date without having before him the carriers' reasons for asking further postponement. After the law was passed, Mr. Thom said, the carriers had asked the Interstate Commerce Commission to give it a construction, by conference rulings, which would except dealings between railroads and their subsidiaries, but the commission had not felt justified in doing so. He illustrated his remarks as to the effect of the law by examples of the separate corporations required by the Texas laws and by the structure of several of the larger railroad systems. The interpretation put on the law by the commission, he said, would require that all dealings between the separate companies of a system be on the basis of competitive bids.

"We are not opposing," he said, "the underlying moral principle that the purchasing agent of a railroad should not have conflicting outside interests, but we are seeking to amend the law to make it workable, and prevent consequences which were not foreseen when it was passed. We are willing that every proposal we make shall be measured by the standard of public interest. In dealings with subsidiary companies there is no conflict of interest."

Mr. Bledsoe said he did not believe Congress had intended to apply the law to transactions with subsidiaries. He thought it was intended to apply to purchases of supplies and sales of securities, but that all doubt should be removed. He showed the committee that the Atchison system consists of five separately-operated lines, several of which are held by Texas corporations, all of the securities of which are owned by the Atchison. The parent company buys most of the materials and supplies for all of them and bills them at cost plus a small handling charge. It also owns most of the system equipment and through trains operate over the system lines. Repair shops are distributed over the lines at convenient points and the repair bills are apportioned on a basis of use. "The details of these transactions are so minute that it would not be possible to handle them on a basis of competitive bids," Mr. Bledsoe said, "and if these great systems are to be maintained in an efficient state of operation you cannot dismember them. If the law is to be applied to these dealings all that is sought to be accomplished by the transportation act would be nullified."

He also pointed out that the Santa Fe lines are joint users of 18 separate depot and terminal companies. He did not know how these terminal company operations can be made a

success if the owning companies cannot have their representatives serve as directors, or if competitive bids are to be required.

Mr. Bledsoe also declared that purchasing by competitive bids is an expensive method and that a good purchasing agent should be able to buy at a lower price by negotiation. The proposed bill would give a railroad the right to buy at less than the lowest bid if possible to do so by negotiation.

Mr. Thom continued his statement on January 8. He said that railroads frequently find it necessary to organize separate companies to furnish fuel and other supplies which are merely an alter ego of the railroad company and in reality a part of its departmental organization. The method of purchasing by competitive bids, he said, has been adopted by governments merely as a safeguard against dishonesty. The Clayton law would practically commit the roads to doing nearly all their buying on competitive bids.

For many kinds of purchases it is practically impossible for the railroad to prepare complete specifications which will cover its requirements and the personal equation with the manufacturer is important. A good purchasing agent can obtain better prices by negotiation with manufacturers than by merely accepting the lowest bid; and frequently it is better economy to buy from responsible manufacturers at a higher price than the lowest bid. Under the law it would be impossible to reject all bids and then negotiate for a still lower one. It would be necessary to ask new bids.

Mr. Thom said that the method of negotiating with bidders results in an economy of millions of dollars. For example, if a railroad asks bids for a thousand cars and the price is satisfactory it might want to increase its order to 1,500 or 2,000 cars at the same price, but under the law it would be necessary to ask new bids.

Senator Kellogg remarked that it would not do much good to require western railroads which as a practical matter must buy rails from the Colorado Fuel & Iron Company because it has the only rail mill in the west, to ask for competitive bids.

The Clayton act, Mr. Thom said, will bring out a horde of impossible adventurers that will try to make the lowest bid with the idea of selling the contract to someone else and will sue the railroads if they reject their lowest bids as not the most favorable. The law does not define what constitutes the most favorable bid.

Mr. Thom then explained the Frelinghuysen bill, proposed as a substitute for Section 10, which does not apply to dealings between railroads and their common carrier subsidiaries but does require competitive bidding for the purchase of supplies from companies having common directors or officers. The bill, however, allows the railroads an honest business discretion in determining which bid, under all the circumstances, is the most favorable. It does not apply to dealings with non-carrier subsidiaries if the railroad owns a majority of its stock except that the railroad would not be allowed to purchase from such subsidiaries at more than the market price except on approval of the Interstate Commerce Commission. Referring to charges made by the International Association of Machinists that railroads are having cars and locomotives repaired at outside shops at excessive prices, Mr. Thom said that the Interstate Commerce Commission had ordered a full investigation. He said that when the railroads were returned by the government an amazingly large majority of their cars and locomotives were in bad order. As much repair work as possible was done in railroad shops and what could not be done by the roads themselves had to be sent to outside shops or left undone. He also said that there was often a difference in the character of the work done in the outside shops, because the equipment requiring the heaviest repairs was sent to them.

Mr. Thom also pointed out that the public is protected by

the provision in the transportation act that the Interstate Commerce Commission shall adjust rates to give a fair return only under honest, efficient and economical management.

Chairman Clark of the Interstate Commerce Commission appeared before the committee again on Wednesday morning and stated that the commissioners are fully agreed that the existing law should be modified and are unanimous in recommending a number of modifications in the Frelinghuysen bill, which he outlined. The commissioners were agreed that the law should not be applied to dealings in securities because the commission already has complete jurisdiction over that subject under the provisions of the transportation law. They were also agreed that it should not be made to apply to transactions between railroads and their carrier subsidiaries or non-carrier subsidiaries controlled by at least one half ownership or by a lease, but the commissioners were opposed to allowing very much discretion in dealings for the purchase of supplies between companies in which there is an interlocking interest.

The first change proposed was one in the title to make the bill an amendment to Section 10 of the Clayton law instead of repealing it, but to insert a provision referring to it in the interstate commerce law so as to make it a part of that law. The commissioners also thought that the law should become effective within 60 or 90 days from its passage instead of at the end of the year. It was also proposed that the law should not apply to transactions amounting to less than \$100,000 a year. The present law applies to transactions amounting to more than \$50,000 a year, and the Frelinghuysen bill applies only to dealings or contracts to the amount of more than \$50,000 in any one transaction. Chairman Clark pointed out that the latter proposal placed too little limitation because transactions could be split up into several amounts each less than \$50,000. Another amendment to the proposed bill suggested was that it should apply to all officers, directors or agents. The commission proposed to eliminate the provision allowing the carrier to apply to the Interstate Commerce Commission for a decision as to what constitutes a substantial interest, for the reason, Mr. Clark said, that it is impossible to define in advance what constitutes a substantial interest, as this may depend on various circumstances. The commission also proposed to strike out the language allowing the carrier to exercise an honest business discretion in determining which bid is most favorable and authorizing it to negotiate with the bidders for more favorable terms. To allow so much discretion, Mr. Clark said, would practically nullify the purpose of the act, and to allow the carrier to increase the quantity to be purchased after having received bids without inviting new bids would make it possible to have a private understanding with one of the bidders that he could secure a larger order than that specified in the bids. He pointed out that the law would not prevent a carrier from negotiating with bidders for more favorable terms except where the interlocking interest exists.

When Mr. Thom asked if the commission would not be willing to provide for emergency purchases without competitive bidding, Mr. Clark said he thought that emergencies could be taken care of in the regulations. He thought there would not be many emergencies in which either the law or the regulations would cause embarrassment because there is no restraint except where the interlocking interest exists. The commission also objected to the provisions in the substitute bill by which carriers might secure the approval of the Interstate Commerce Commission for a different price than the existing market price on transactions between carriers and their non-carrier subsidiaries. The commission also proposed substantially the language of the present law requiring carriers to file with the commission within 30 days a full and detailed record of the transactions which are subject to the law. The Frelinghuysen bill merely proposes that such

records shall be preserved by the carrier in its office subject to the inspection of the commission. Chairman Clark said that if carriers were not required to report the commission would have very little information as to possible violations and if carriers are going to have such transactions as those aimed at in the law they should report the facts to the commission.

Chairman Clark said the commission thinks that Section 10 is out of harmony with the provisions, purpose and principle of the transportation act and that it would be impracticable, if not impossible, for the carriers to conduct their financial business or for the commission to administer its functions of regulating them if limited by the unyielding provisions of Section 10.

Senator Townsend asked if the chairman had anything further to say relating to the charges of excessive prices being paid for car and locomotive repairs in outside shops. Mr. Clark said the commission is proceeding with its investigation and intends to ascertain the exact facts, but no facts had yet been demonstrated from which it could give the committee any reliable conclusions. He said the commission had checked up the figures used by Representative Huddleston of Alabama in a speech in the House, but had not been able to verify them. He pointed out that locomotives had been put to a very severe strain during the war period and said there may have been a very good reason for a railroad to send them to outside shops. It also may be found, he said, that in some instances this was done with a disregard for cost. It may also be found that there was some interlocking interest, but the commission is not yet able to state a conclusion. As to whether there had been under-maintenance of the equipment during the period of federal control, he said there are different views, but he would say that ever since the European war broke out there has been a continuous and tremendous pressure for transportation and equipment has been used to the maximum in an attempt to accomplish the largest possible amount of public service.

Bill to Provide for Partial Payment of Guaranty

WASHINGTON, D. C.

A BILL TO MAKE the Transportation Act provide clearly and specifically what the railroads and the Interstate Commerce Commission have contended it already contemplated, but which the Comptroller of the Treasury and the Supreme Court of the District of Columbia have said it does not provide, that is, partial payments to the railroads on account of their guaranty for the six months after the termination of federal control, was introduced in Congress on January 6 by Representative Winslow of Massachusetts. If the bill is passed it would enable the railroads to collect a large part of the \$300,000,000 or \$400,000,000 of their guaranty that is due without waiting for the long and tedious process of final adjustment of the exact amounts. The bill also applies to the amounts due to many of the short lines that were relinquished from federal control as reimbursement for their deficits incurred by reason of federal control.

The Winslow bill proposes to amend and reenact subdivision (g) of Section 209, relating to the six months' guaranty, so as to read as follows:

"(g) The commission shall, as soon as practicable after the expiration of the guaranty period, ascertain and certify to the Secretary of the Treasury the several amounts necessary to make good the foregoing guaranty to each carrier. The Secretary of the Treasury is hereby authorized and directed thereupon to draw warrants in favor of each such carrier upon the Treasury of the United States for the amount

shown in such certificate as necessary to make good such guaranty, it being the true intent and meaning hereof that whenever, and as often as, the commission shall certify to the Secretary of the Treasury an amount as certainly due and necessary to make good the foregoing guaranty to any such carrier, the Secretary of the Treasury is hereby authorized and directed, upon receipt of such certificate, to draw a warrant in favor of such carrier upon the Treasury of the United States for the amount shown in such certificate as an amount necessary to make good the foregoing guaranty, whether such amount is in final settlement or in partial payment, and the Comptroller of the Treasury is hereby directed to countersign the same forthwith. The Secretary of the Treasury shall thereupon deliver the said warrant to such carrier, and the Treasurer of the United States is hereby directed to pay the same, upon presentation, out of the appropriation made therefor in this subdivision. An amount sufficient to pay such warrants is hereby appropriated out of any money in the Treasury not otherwise appropriated.

"In ascertaining the several amounts necessary to make good the foregoing guaranty to each carrier the commission is further authorized, in the case of debits and credits to railway operating income which cannot at the time be definitely determined, to make, whenever in its judgment practicable, a reasonable estimate of the net effect of any such items, and, when agreed to by the carrier interested, to use such estimate as a definitely ascertained amount in certifying the amounts due under the said guaranty, and such estimates so agreed to shall be binding in final settlement."

It also proposes to amend and reenact subdivision (g) of Section 204, pertaining to the short lines that were relinquished during the period of federal control, to make it read similarly.

The House committee on interstate and foreign commerce has referred the bill to the Interstate Commerce Commission for an opinion and has announced a hearing on the bill at Washington on January 14. The railroads have also announced their intention of taking an appeal from the recent decision of the Supreme Court of the District of Columbia denying the petition of the Grand Trunk Western for a mandamus to compel the Secretary of the Treasury to honor a certificate of the Interstate Commerce Commission for a partial payment on account of its guaranty.

A. R. A. Tackles Fuel Conservation

THE FIRST ACTIVE STEP toward improving fuel efficiency to be undertaken by the American Railway Association has been the organization of joint committee which held its first meeting in New York on January 6. The motive leading toward a more active participation in fuel conservation is the necessity for more rigid economy in the operation of the railroads. It is anticipated that traffic will not be as heavy and hence that the gross revenues will be less during 1921 than in the preceding year and it is realized that the only way in which the railroads can look forward with certainty to an improvement in their net revenues during the coming year lies in the enforcement of greater economies in operation. Officials directing this movement believe that it is incumbent upon the railroads to demonstrate the utmost efficiency in every direction in conformity with the spirit of the Transportation Act.

The fuel bill, on account of its size and its susceptibility to greater efficiency both in purchase and consumption, appears to afford the greatest opportunity for substantial savings. With this in view, the American Railway Association directed the appointment of a representative committee on fuel conservation which will undertake to outline the policies of this association toward fuel conservation.

This committee is comprised of 21 members. Seven members represent the operating department; seven, the mechanical department, and seven represent the service of supply. The members of the committee representing the operating department are: J. B. Parrish, general manager, Chesapeake & Ohio; E. M. Costin, general manager, Big Four; W. M. Jeffers, general manager, Union Pacific; J. E. Hutchinson, general manager, St. Louis-San Francisco; W. D. Robb, vice-president, Grand Trunk; H. M. Eicholtz, assistant to vice-president, Chicago & North Western, and H. McVeagh, assistant to general manager, Big Four.

Those representing the mechanical department are: C. H. Wiggins, superintendent motive power, Boston & Maine; Wm. Schlafge, mechanical manager, Erie; G. H. Emerson, chief of motive power and equipment, Baltimore & Ohio; Jos. Hainen, assistant to vice-president, Southern; W. J. Tollerton, general mechanical superintendent, Chicago, Rock Island & Pacific; John Purcell, assistant to vice-president, Atchison, Topeka & Santa Fe; H. M. Curry, general mechanical superintendent, Northern Pacific, and W. L. Robinson, superintendent of fuel and locomotive performance, Baltimore & Ohio.

The service of supply is represented on the committee by the following members: S. B. Wight, manager purchases and stores, New York Central; Samuel Porcher, general purchasing agent, Pennsylvania; H. B. Grimshaw, assistant to general manager, Seaboard Air Line; L. N. Hopkins, purchasing agent, Chicago, Burlington & Quincy; F. A. Bushnell, purchasing agent, Great Northern; G. E. Scott, purchasing agent, Missouri, Kansas & Texas, and T. Britt, general fuel agent, Canadian Pacific.

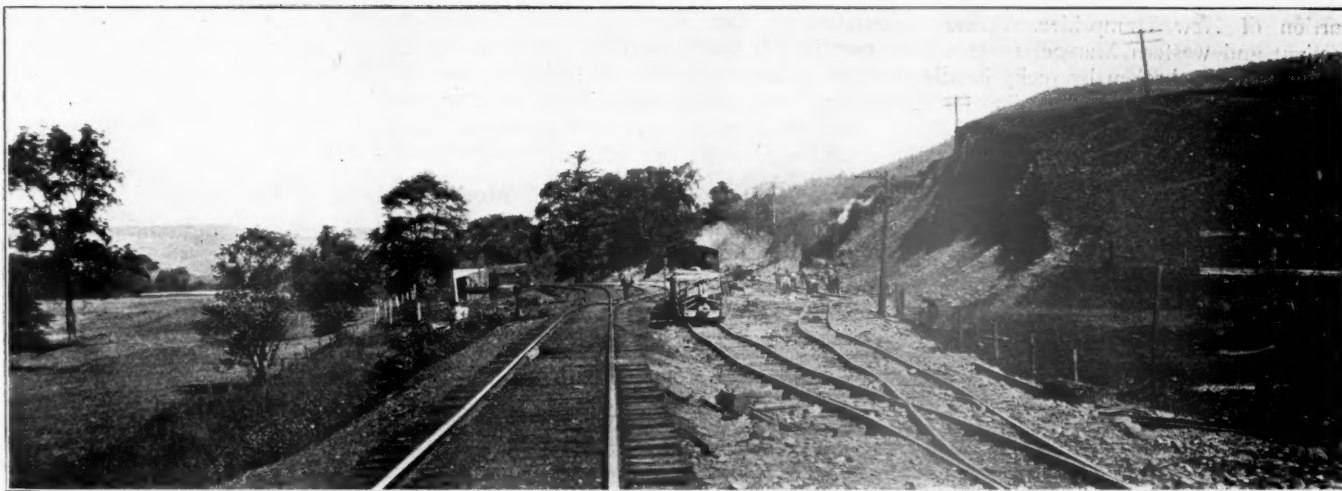
William Schlafge, mechanical manager of the Erie, was selected as chairman and William Jeffers, general manager of the Union Pacific, and Samuel Porcher, general purchasing agent of the Pennsylvania, were selected as vice-chairmen. V. R. Hawthorne, secretary of the Mechanical Division of the American Railway Association, was made secretary. The chairman and vice-chairmen constitute a committee of direction of the Fuel Conservation Committee. The official headquarters of the committee will be at the American Railway Association offices in Chicago.

As a beginning of its work, the committee decided to undertake at once the study of four subjects:

- 1—Organization of fuel conservation.
- 2—Inspection of fuel and preparation of specifications for fuel.
- 3—Statistics.
- 4—Existing methods of conservation—mechanical and others.

Four sub-committees were appointed to make special studies of these subjects for report to a general meeting of the Fuel Conservation Committee to be held within 30 days. The personnel of the Committee on Organization of Fuel Conservation is as follows: W. J. Tollerton, chairman; W. D. Robb and S. B. Wight. The committee on inspection of fuel and preparation of specifications consists of E. M. Costin, chairman; G. H. Emerson and L. N. Hopkins. The committee on statistics is comprised of F. H. Hammel, chairman; T. Britt and H. M. Curry, and the committee on existing methods of conservation includes John Purcell, chairman; J. B. Parrish and G. E. Scott.

THE SUIT OF THE STATE OF NEW YORK against the Interstate Commerce Commission, asking for an injunction to restrain the commission from enforcing its proposed increases in intrastate passenger rates in New York is to be heard by the United States District Court at Norwich, N. Y., on January 22. The ten members of the Interstate Commerce Commission, as a body, and as individuals, are named as defendants.



Some Grading Work on the Delaware & Hudson

Analysis of Railroad Grading Develops Trend Curves

Valuation Departments of Representative New England Roads Present Interesting Study of Reproduction Costs

IN ARRIVING AT the cost of reproduction of the properties of the roads as of the year 1914, many interesting and difficult questions have arisen. Various railroads of the country, through their valuation departments, have endeavored to make such studies of their properties as would help or enable the engineers of the Bureau of Valuation of the Interstate Commerce Commission, and others, to determine what is a fair and equitable figure. One of the most complete studies of this nature is a grading report made by a committee representing the New England carriers which has gone into the question of unit costs of grading in a very thorough and comprehensive manner.

The report, which covers about one hundred pages of type-

sufficient to show the methods which were used by the committee in developing the diagrams or "trend" curves and may be used as a guide for developing similar studies in other localities wherein the surrounding conditions are more or less uniform. It must be conceded here that this form of study will not apply where an attempt is made to cover a section of country which has widely different industrial and topographical characteristics.

Type of Country and Roads Represented

The roads represented in the report are the Bangor & Aroostook, covering eastern and northern Maine; the Boston & Albany, covering Massachusetts and eastern New York;

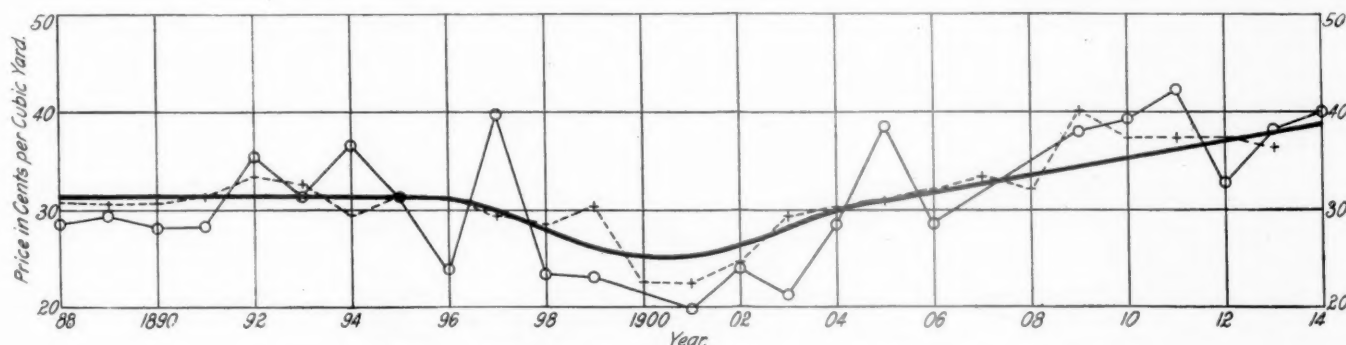


Fig. 1. A Typical Trend Curve of an Individual Road

written matter, tables and diagrams, presents all of the contract data dealing with common excavation, loose rock and solid rock, that this committee could secure and covered the moving of over 34,000,000 cu. yd. of excavation from bank to fill, exclusive of the work on the Southern New England. This represents all of the work of any magnitude which has been done between 1880 to 1915 in the territory covered by the New England railroads. The results obtained from the data and the diagrams confirm what is a matter of common knowledge, that is, that the costs between 1896 and 1900 were low and that from 1900 to 1915 they have increased. The data given herein, while not complete, is

the Boston & Maine, covering northern Massachusetts, eastern New York, Vermont, New Hampshire and southeastern Maine; the Central New England, covering western Connecticut and eastern New York; the Central Vermont, covering Vermont, Massachusetts and Connecticut; the Delaware & Hudson, covering eastern New York; the Maine Central, covering southern Maine and New Hampshire, and the New York, New Haven & Hartford, covering Massachusetts, Rhode Island, Connecticut and southeastern New York.

The section of country thus represented consists topographically of a comparatively narrow coastal plain backed by foothills which become mountainous over a considerable

portion of New Hampshire, Vermont, northwestern Connecticut and western Massachusetts. The coast line is very irregular, being broken by rocky headlands and indented by tidal estuaries with deep deposits of silt, causing heavy subsidence and difficulty in depositing fills.

The rock is largely volcanic, generally granite and con-

hills are full of springs and the rainfall and snowfall are heavy. These springs usually make trouble where the rock lies in pinnacles and saddles or where an impervious clay underlies the sand or gravel, and frequently require pumping, especially where the cut runs with the grade. In many cuts the common excavation approaches hard pan.

Methods Used in Analyzing

The prices shown in the accompanying tables were all figured on the "one way" basis, that is on a single price from cut to fill. At first it was attempted to work out the grading on the basis of the contract price without the overhaul and to determine separately a price for overhaul. It was found, however, that not only was there no consistency between the methods adopted by the Bureau of Valuation and the practices of the various carriers, but that no continuous plan had been followed in the case of the individual carriers for any considerable number of years. Some of the contracts named

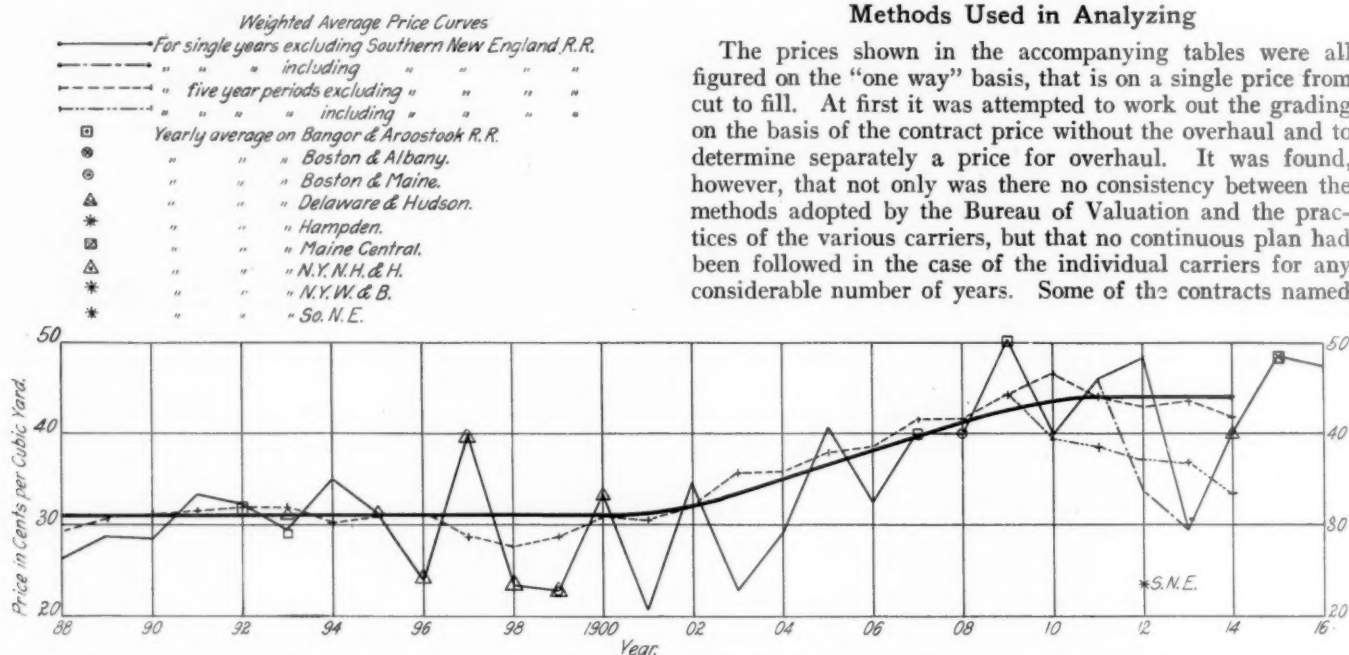


Fig. 2. The Trend Curves Between 1888 and 1916, Showing Yearly Weighted Average of Individual Roads

glomerates. Slate predominates locally in some sections of Maine, Vermont and eastern New York, marble in parts of Connecticut, Massachusetts and lower Vermont and sandstone with fissures filled with trap rock in the Connecticut valley south of the Massachusetts-Vermont line. The rock as a rule is hard to drill and difficult to handle. It generally occurs in small quantities, in saddles and pinnacles cov-

a price in place, including all haul, some named a free-haul limit of 500 ft., some 600 ft., others 1,000 ft. and others still another distance beyond which overhaul would be set up as a pay quantity.

As a result of this condition, the only common basis to which all the data could be brought was "cost in place" including haul. The diagrams were plotted on that basis and

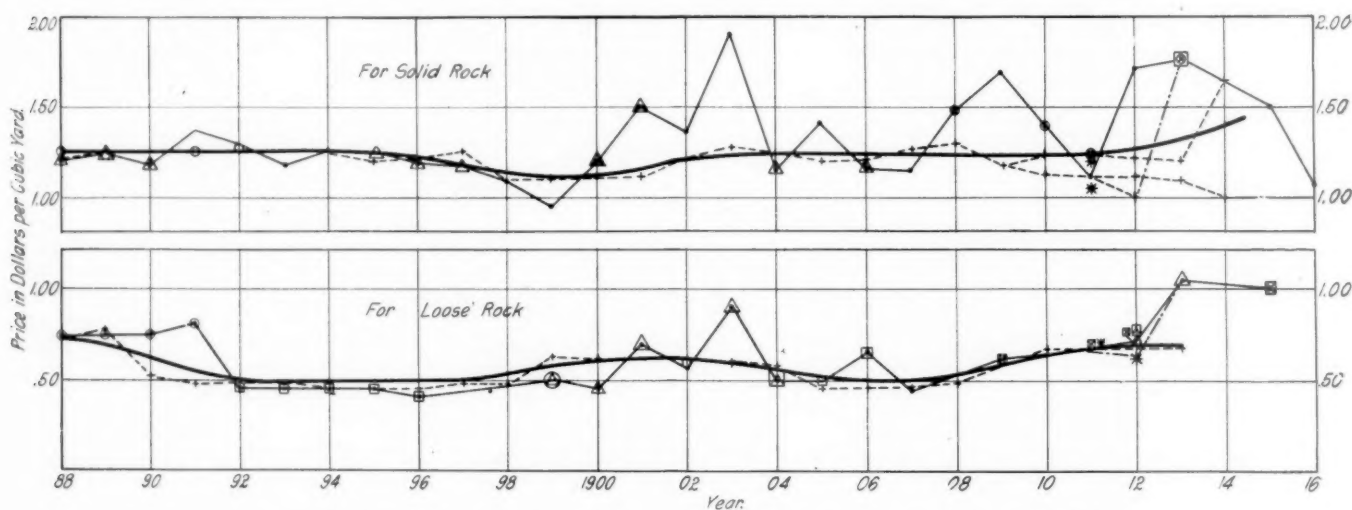


Fig. 3. Trend Curves of Loose Rock and Solid Rock for the New England Group

ered by an overburden of earth of irregular depth. For this reason the grade line of the New England railways has usually been kept high and the deficiency made up from borrow.

The earth is generally gravel or clay or a combination of the two, while the cuts are frequently of sand which, when wet, as is often the case, becomes of a quicksand nature. The

the tables were reduced to the same basis, although where the data were available the tables show the two factors separately. Where no figures appear in the overhaul column the cost of haul is included in the total price.

Table I illustrates a part of a typical analysis of one of the roads in question. The data are grouped by years, the date of the contract being the one governing its place in the

tabulation. Taking the year 1911 for an example it will be seen that there were but two contracts, one involving the moving of 13,790 cu. yd. at a cost of 35 cents a yard, or a total cost of \$4,826.50, and the other involving 106,715 cu. yd. at 42 cents a yard or \$44,820.30. Following the first contract through it will be seen that there was a total overhaul cost of \$716.83 which when reduced by the percentage

is also shown in Table II, and graphically by the dotted line in Fig. 1. This method is simply the taking of the weighted average costs of the work let in the individual years, as for instance 1880, 1881, 1882, 1883 and 1884, averaging them mathematically and tabulating the results as a five year weighted average to be represented at the middle of the period, that is, at the year 1882. The next figure was ob-

TABLE I—COMMON EXCAVATION COMPILATION SHOWING WEIGHTED AVERAGE CONTRACT PRICES OF GRADING FOR ROADWAY, YARDS AND TERMINALS

Year	Location	Quantity cu. yd.	Price	Amount	Overhaul			Total amount incl. overhaul	Price per cu. yd. incl. O. H.	Totals by years			W. A. price per cu. yd. incl. O. H.
					Total Amount	Per cent common is to total	Amount			Quantity cu. yd.	Amount incl. O. H.		
1910—	Walpole-So. Framingham—double track- ing	87,133	\$0.35	\$30,496.55	\$4,229.46	89	\$3,764.22	\$34,260.77	\$0.393	288,927	\$113,093.36		\$0.391
	Hawleyville-Botsford—double tracking.	63,471	.32	20,310.72	18,846.45	33	6,219.33	26,530.05	.418				
	Naugatuck Jct.—No. leg of wye.	14,355	.33	4,737.15	1,042.73	51	531.79	5,268.94	.367				
	Ashton, R. I.—side track—Goddard Co.	800	.35	280.00				280.00	.35				
	Woonsocket, R. I.—new freight factory	19,932	.33	6,577.56				6,577.56	.33				
	Botsford-Shelton—double tracking.	69,771	.35	24,419.85	5,228.39	37	1,934.50	26,354.35	.378				
	Cedar Hill—engine facilities	6,996	.35	2,448.60				2,448.60	.35				
	Larchmont—grading—pro. freight facil- ities	1,764	.27	476.28				476.28	.27				
	Cohasset-Greenbush—double tracking..	24,705	.42	10,376.10	642.85	81	520.71	10,896.81	.441				
	Totals and W. A. price.....	288,927	\$0.345	\$100,122.81									
1911—	E. Prov.-E. Jct.—2d track impr.....	13,790	\$0.35	\$4,826.50	\$716.83	69	\$494.61	\$5,321.11	\$0.386	120,505	\$50,674.21		\$0.421
	Westerly, R. I.—E. G. C., etc.....	106,715	.42	44,820.30	555.00	96	532.80	45,353.10	.425				
	Totals and W. A. price.....	120,505	\$0.41	\$49,646.80									
1912—	Westchester, N. Y.—eastbound class. yard	1,594	\$0.45	\$717.30				\$717.30	\$0.45	243,995	\$79,944.55		\$0.328
	Berk. Jct.-Brookfield Jct.—double track- ing	9,000	.40	3,600.00				3,600.00	.40				
	New Haven—west cut	6,901	.25	1,725.25				1,725.25	.25				
	New Haven—west cut	7,900	.40	3,160.00				3,160.00	.40				
	Brookfield Jct.-New Milford—double tracking	218,600	.30	65,580.00	\$5,800.00	89	\$5,162.00	70,742.00	.324				
	Totals and W. A. price.....	243,995	\$0.31	\$74,782.55									
1913—	Fluteville, Conn.—imp. lines of sight.	1,093	\$0.50	\$546.50				\$546.50	\$0.50	45,490	\$17,346.42		\$0.381
	Princeton, Mass.—pro. wye track...	8,426	.34	2,864.84				2,864.84	.34				
	Middleboro, Mass.—pro. wye track...	2,928	.40	1,171.20				1,171.20	.40				
	Woonsocket, R. I.—new freight facil- ities	13,036	.3975	5,181.81				5,181.81	.397				
	Clinton Wire Cloth Co.—side track...	2,835	.35	992.25				992.25	.35				
	Clinton—Swift Co. side track.....	356	.35	124.60				124.60	.35				
	Olneyville, R. I.—E. G. C.....	12,961	.25	3,240.25	\$1,472.00	96	\$1,413.12	4,653.37	.359				
	Assonet, Mass.—pro. side track.....	3,855	.47	1,811.85				1,811.85	.47				
	Totals and W. A. price.....	45,490	\$0.35	\$15,933.30									

69 (per cent common to total) gave an overhaul charge of \$494.61. Adding this to the contract cost gave a total cost, including overhaul of \$5,321.11 for moving 13,790 cu. yd., or a cost of 38.6 cents per cu. yd. In the second contract the total cost, including overhaul, came to \$45,353.10 for moving 106,715 cu. yd., or a unit cost of 42.5 cents per cu. yd. The total yardage for the year was then 13,790 plus 106,715 or 120,505 cu. yd., handled at a total contract price of \$5,321.11 plus \$45,353.10 or a total of \$50,674.21, thus giving a unit cost of 42.1 cents per cu. yd. for the year.

The last figures which are shown in the three right-hand columns of the table represent the weighted average for the year 1911. This procedure was followed out for each year and for each individual road. In this particular illustration the tables and diagrams are devoted to common excavation, the same procedure, however, was followed out in the classification of loose rock and of hard rock, of which however only the composite diagram or trend curves are shown.

Securing General Averages for Plotting

The total yearly averages or weighted averages for each road were then tabulated as shown in Table II, which is representative of a part of one of the tables presented in the report.

The results so obtained were plotted on a diagram which is shown in Fig. 1, the light solid line representing the yearly averages. In order to smooth out the irregularities due to any preponderating influence of some local work, a running average was developed by five year periods, which

tained by taking the years 1881, 1882, 1883, 1884 and 1885 and repeating the process and showing the result as for the year 1883. In the fourth column, after the year 1894, will be seen the figure 940,736 which represents the total yardage

TABLE II—WEIGHTED AVERAGE PRICES FOR FIVE-YEAR PERIODS WITH OVERHAUL, EXCAVATION—COMMON—ROADWAY, YARDS AND TERMINALS

Year	Contract price			Quantity Sum—5-yr. periods	W.A.P. 5-yr. periods	Amounts Sum—5-yr. periods	Year to which W.A.P. applies
	Quantity	Price	Amount				
1890..	172,546	\$0.281	\$48,476.78	806,894	\$0.308	\$248,826.26	1888
1891..	95,976	.282	27,076.35	902,870	.306	275,902.61	1889
1892..	336,333	.352	118,251.96	1,066,109	.307	327,415.35	1890
1893..	94,164	.314	29,588.41	923,526	.313	289,093.87	1891
1894..	241,717	.366	88,521.51	940,736	.332	311,915.01	1892
1895..	962,112	.312	300,481.89	1,73,302	.326	563,920.12	1893
1896..	984,017	.239	235,359.10	2,618,343	.295	772,202.87	1894
1897..	636,740	.396	253,277.28	2,918,750	.311	907,228.19	1895
1898..	4,772	.233	1,110.60	2,829,358	.311	878,750.38	1896
1899..	532,043	.230	122,214.76	3,119,684	.292	912,443.63	1897
1900..				2,157,572	.284	611,961.74	1898
1901..	215,131	.198	42,639.31	1,388,686	.302	419,241.95	1899
1902..	242,804	.240	58,272.96	994,750	.225	224,237.63	1900
1903..	142,605	.211	30,019.92	1,132,583	.224	253,146.95	1901
1904..	406,983	.286	115,574.40	1,007,523	.245	246,506.59	1902
1905..	527,427	.384	202,715.76	1,534,950	.292	449,222.35	1903
1906..	569,471	.286	162,624.22	1,889,290	.301	569,207.26	1904
1907..				1,646,486	.31	510,934.30	1905
1908..				1,503,881	.32	480,914.38	1906
1909..	3,455	.380	1,312.90	1,100,353	.333	366,652.88	1907
1910..	288,927	.396	113,055.36	861,853	.321	276,992.48	1908

dealt with in the years 1890 to 1894, inclusive, at a total cost of \$311,915.01 or at an average unit cost of 33.2 cents per yard. According to the method already described this would then be plotted or shown as of the year 1892. This method was carried out for each road and the results tabu-

lated and plotted as shown. After the diagram had been completed the general trend of the prices was developed by drawing an unbroken line making a graphical average of the high and low spots already plotted.

The next step after securing the averages of the individual roads was the combining of the results so obtained into a general tabulation of all the roads represented in the New England group. The total annual yardages moved, the total cost, and the unit cost were tabulated as in Table II and a five year running average taken for the group. A representative period is shown in Table III and covers the years 1890 to 1910, inclusive. The results were then plotted as shown in Fig. 2.

TABLE III—WEIGHTED AVERAGE PRICES FOR 5-YEAR PERIOD ON ALL NEW ENGLAND ROADS—EXCAVATION—COMMON—ROADWAY, YARDS AND TERMINALS—INCLUDING OVERHAUL

Year	Totals by years			Totals by 5-year periods			Year to apply
	Quantity	Amount	W.A. price	Quantity	Amount	W.A. price	
1890...	288,415	\$82,353.31	\$0.286	3,365,805	\$1,041,967.59	\$0.310	1890
1891...	718,162	237,558.47	.331	3,554,564	1,114,484.53	.314	1891
1892...	1,567,937	507,161.04	.323	3,655,706	1,167,094.06	.319	1892
1893...	703,427	207,640.02	.295	4,647,220	1,482,718.89	.319	1893
1894...	377,765	132,381.22	.350	4,924,684	1,484,039.37	.301	1894
1895...	1,279,929	397,978.14	.311	3,993,487	1,230,155.61	.308	1895
1896...	995,626	238,878.95	.240	3,294,832	1,023,626.19	.311	1896
1897...	636,740	253,277.28	.398	3,874,139	1,110,259.43	.287	1897
1898...	4,772	1,110.60	.233	2,766,644	769,679.65	.278	1898
1899...	957,072	219,014.46	.229	2,002,149	578,240.01	.289	1899
1900...	172,434	57,398.36	.333	4,133,664	1,271,981.81	.308	1900
1901...	231,131	47,439.31	.205	4,349,528	1,320,969.51	.304	1901
1902...	2,768,255	947,019.08	.342	3,951,409	1,263,981.96	.320	1902
1903...	220,636	50,098.30	.227	6,335,604	2,249,598.93	.355	1903
1904...	558,953	162,026.91	.290	6,794,025	2,425,151.95	.357	1904
1905...	2,556,629	1,043,015.33	.408	5,908,829	2,231,179.20	.378	1905
1906...	689,552	222,992.33	.323	5,716,809	2,192,527.30	.384	1906
1907...	1,883,059	753,046.33	.400	6,402,517	2,657,637.07	.415	1907
1908...	28,616	11,446.40	.400	4,895,017	2,030,985.15	.415	1908
1909...	1,244,661	627,136.68	.504	6,941,148	3,065,648.92	.442	1909
1910...	1,049,129	416,363.41	.397	7,193,630	3,341,126.89	.464	1910

Effect of the Southern New England

In connection with the plotting of the composite diagrams an interesting feature developed through the use of the data obtained on the Southern New England. The committee felt that, in preparing the report, the work on the Southern New England should not be included as it was done under a losing contract manifestly unbalanced, there being a suit pending between the contractor and the road for about one and one-half million dollars, due to a disagreement over classification of material. The work, however, was included separately in order to show what effect its inclusion would have on the results obtained from the other roads of the group.

Referring to Fig. 2 it will be seen that there is a second dotted line beginning at the year 1909 and running downwards to the year 1914. This lower line represents the effect of combining the work of the Southern New England during the year 1912 with the remainder. The yardage in question was exceptionally large in comparison to that of the other roads, being approximately 60 per cent of the total yardage moved in that year and consequently dominates the weighted average. Excluding these figures the general trend of prices for common excavation is shown by the heavy smooth line. The general trend of prices for loose rock and solid rock are shown in Fig. 3.

The Hampden railroad quantities were reclassified to correspond with the government specifications and the sub-contract figures included in the general average and used in the report although the Public Service Commission of Massachusetts found after investigation that the amounts paid the sub-contractors were low and that the higher figures paid to the principal contractors were substantially correct for grading in Massachusetts at that time.

No attempt was made to fix a definite unit price for grading for the individual carriers. The point where the trend line crosses 1914 on the composite diagram is an average for New England and may be or may not be, according to the committee, the proper price to apply to the grading of any one carrier's property.

We are indebted for the above information to H. J. Sargent, assistant chief engineer of the Boston & Maine, Boston, Mass., who has been chiefly instrumental in originating and preparing this study.

Loan Fund Nearly Exhausted

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION on January 11 issued a statement giving the status of the revolving fund created by section 210 of the Transportation Act, 1920, for the purpose of enabling the rail-carriers of the country "properly to serve the public during the transition period immediately following the termination of federal control." The total amount of the revolving fund is \$300,000,000, and it has been commonly referred to as the \$300,000,000 loan fund, but of which \$40,000,000 has been reserved temporarily to meet claims and judgments arising out of operations during the period of federal control as provided in section 206 of the Transportation Act, 1920—leaving \$260,000,000 available for loans to the carriers.

The total of loans approved by the commission, as of December 31, 1920, is \$205,721,357, as follows:

To aid in meeting maturing indebtedness.....	\$86,173,750
To aid in the acquisition of equipment.....	41,385,870
To aid in making additions and betterments to existing equipment.....	17,291,294
To aid in making additions and betterments to way and structures to promote the movement of freight-train cars.....	60,870,443

Additional loans aggregating \$51,653,594 may be made on pending applications, the commission said. This will leave \$2,625,049 of the revolving fund available for additional loans. There will be credits to the revolving fund, during the transition period, of interest and repayments of principal with respect to loans heretofore made, which credits will be available for still further loans.

The Treasury Department on January 10 also issued a statement of the various payments it had made under the transportation act, as follows:

Total Payments at Close of Business January 8, 1921—	
(a) Under Section 204, for reimbursement of deficits during federal control.....	\$622,877.49
(b) Under Section 209, paragraphs (h) and (i), for advances on account of the sum estimated to be necessary to make good the guaranty therein provided.....	260,266,874.00
(c) Under Section 210, for loans from the revolving fund of \$300,000,000 therein provided.....	166,445,937.00
Total.....	\$427,335,688.49

The railroads to whom payments have been made by the Treasury for loans under section 210, and the aggregate amounts severally paid to them in this respect are as follows:

Atlanta, Birmingham & Atlantic.....	\$200,000
Baltimore & Ohio.....	3,000,000
Bangor & Aroostook.....	20,000
Boston & Maine.....	11,656,479
Buffalo, Rochester & Pittsburgh.....	1,000,000
Carolina, Clinchfield & Ohio.....	3,000,000
Central New England.....	300,000
Chicago Great Western.....	2,445,373
Chicago, Indianapolis & Louisville.....	200,000
Chicago, Milwaukee & St. Paul.....	25,340,000
Chicago, Rock Island & Pacific.....	9,862,000
Chicago & Western Indiana.....	8,000,000
Erie.....	8,000,000
Fort Smith & Western, Receiver.....	156,000
Great Northern.....	17,910,000
Gulf, Mobile & Northern.....	515,000
Illinois Central.....	4,440,000
Kansas City, Mexico & Orient, Receiver.....	2,500,000
Maine Central.....	1,653,000
Missouri Pacific.....	8,871,760
New York Central.....	26,775,000
New York, New Haven & Hartford.....	6,730,000
Northern Pacific.....	6,000,000
Pennsylvania.....	6,780,000
Rutland.....	61,000
Salt Lake & Utah.....	300,000
Seaboard Air Line.....	6,073,400
Trans-Mississippi Terminal.....	1,000,000
Terminal Railroad Co. of St. Louis.....	896,925
Virginian.....	1,000,000
Waterloo, Cedar Falls & Northern.....	60,000
Western Maryland.....	300,000
Wheeling & Lake Erie.....	1,400,000
Total.....	\$166,445,937

Labor Board Opens Hearings on Working Conditions

Carriers Oppose Perpetuation of National Agreements Employees File Charges Against Roads

THAT THE NATIONAL AGREEMENTS between the railroads and various classes of their employees, instituted within six months before the end of federal control, should not, in the interests of "honest, efficient and economical management" be continued longer under private operation, was contended by representatives of the railroads before the Railroad Labor Board on January 10 during the opening hearings on the demand of railway employees for the perpetuation of these agreements.

"The only parties who are fully qualified to consider such regulations are the individual managements and their employees," testified E. T. Whiter, chairman of the Conference Committee of Managers of the Association of Railway Executives, which is presenting the carriers' side of the controversy.

The reasons for the carriers' opposition to national agreements were outlined during the course of Monday's hearings in the opening statement on behalf of the railroads. This opposition, according to Mr. Whiter's testimony, is based on the facts that:

- (1) They are ultra-restrictive and therefore prevent the honest, efficient and economical management demanded by the transportation act;

- (2) The variable conditions in different sections of the country make the universal application of their provisions impracticable;

- (3) The existing rules, the continuation of which is proposed by the men, are capable of various constructions;

- (4) The existing agreements provide that the rules contained therein shall apply to all employees of any particular craft regardless of the department of the railroad in which the man is employed; thus leading to a division of jurisdiction and a conflict in the working rules applicable to employees engaged in the same work;

- (5) The existing agreements have destroyed acknowledged efficient and economical practices such as the piece-work system for regulating rates of pay;

- (6) The railroads must have relief from the rules controlling the employment of men, which are so restrictive as to prevent them from obtaining a sufficient number of employees in certain departments, thus interfering with output and causing delay to the movement of traffic;

- (7) The agreements contain many rules which provide for payment for work not performed, and thereby cause many millions of dollars of unnecessary expense annually.

"The railroads do not object to schedules (the technical term for railway agreements) properly negotiated and entered into with their own employees," Mr. Whiter said, "as is evidenced by the fact that nearly all, if not all, of the roads represented by this committee, have had schedules with the various train service organizations for many years.

"Prior to federal control, some roads had schedules with other classes of their employees; many had no schedules with any crafts other than the train service organizations, but there were no so-called 'national agreements' which made all rules uniformly the same throughout the country. All roads that did have schedules directly negotiated them to fit their own conditions with their own men, and in every case the railroads had the undisputed right to negotiate their own schedules, which was denied during federal control.

"Under governmental control the railroads were unified, and the director general entered into so-called 'national

agreements' with the shopmen, maintenance of way employees, clerks, firemen and oilers, and signalmen. The first of these so-called 'national agreements' was made with the shop crafts less than six months, and the last, that with the signalmen, only a few days before the return of the roads to their owners. These agreements, which were of universal application for the period of federal control, were specifically recognized by the parties signatory thereto as effective during this period only, and contain nothing that would impose such obligation upon all roads alike after individual responsibility had to be assumed by the separate railroads for their successful operation as separate properties. Therefore, we contend that under private control consideration must necessarily be given to the conditions and peculiarities of operation on the individual properties in the preparation of any regulations governing the working conditions of employees of those properties. The only parties who are fully qualified to consider such regulations are the individual managements and their employees.

"Many of the rules in the so-called 'national agreements' are," he continued, "so ultra-restrictive that they positively prevent reasonably economical operations, and result in serious interference with efficiency and production. There should be no such interference with the responsibility of the managements as might unreasonably impair the efficient and economical operation of the properties, of which responsibility the managements cannot divest themselves, and which responsibility is specifically placed upon them by the provisions of the Transportation Act, 1920, in the following language:

The Commission * * * shall give due consideration among other things, to the transportation needs of the country and the necessity (under honest, efficient and economical management of the existing transportation facilities) of enlarging such facilities in order to provide the people of the United States with adequate transportation.

"The responsibility upon the individual properties, and the variable conditions which are encountered in the different sections of a country so large as the United States, we hold makes impracticable the universal application of the provisions of the so-called 'national agreements.' We hold also that many of the rules are so worded that they are capable of various constructions and have resulted in so-called interpretations which are in fact new rules; others are impractical of application without incurring excessive penalties. Experience in trying to work under the rules has demonstrated that they have resulted in extraordinarily numerous questions from both the employees and the managements. This in itself makes the rules particularly objectionable. We respectfully ask, therefore, that this board leave the individual roads free to negotiate their own schedules, so as best to meet justly the widely varying conditions on the different roads. We hold that this principle is recognized in Section 301 of the Transportation Act itself, which provides that the railroads and their employees shall negotiate directly with each other to the fullest extent before referring questions at issue to other tribunals.

"The so-called 'national agreement' covering the shop crafts provides that the rules contained therein apply to all employees of any particular craft regardless of the department in which employed. Under these conditions portions of gangs are necessarily governed by one set of rules and other portions of the same gangs by another, which is obvi-

ously wholly wrong in principle and practice. Employees of each department should be separate and distinct from the employees of any other department, and should be governed entirely by the rules or schedules of the department in which they are employed. There should be no division of jurisdiction. It is true that certain mechanical work is required in the maintenance of way department. Nearly all of it is road work, performed under entirely different conditions than prevail in shops and shop rules are not applicable. The employees who perform this work must be trained, supervised and promoted by the officials of the department in which they are employed, in order to secure that efficiency, economy and despatch which is essential to good management and the proper discharge, by the railroads, of their duties as common carriers. Rules agreed upon by the individual railroads with their employees can be so constructed as to give employees who are members of the same craft, but employed in different departments, all of the protection to which they are justly entitled.

"Those roads, represented by this committee, which have been working on the eight-hour-day basis, will continue to do so unless changed by mutual agreement with their employees, but they must have the right to re-establish more efficient and economical practices, when it is found desirable and practicable to do so. We refer, among other things, to piece-work methods which were abolished. This action has cost many millions of dollars to the roads which had for years successfully produced much of their output by piece-work methods. The excess cost, which is really a loss to the railroads, is piling up day after day and will continue to do so as long as the railroads are prevented from re-establishing the piece-work basis and until the railroads are free to re-establish such former practices they will not be able to comply wholly with the requirements of the transportation act. By this method the output of the shop is increased, and the workmen on account of their ability and skill are afforded opportunity for receiving increased compensation over and above what they would receive working on the day basis. The piece-work method is well recognized as being the most efficient method of operation and proof of this is the large number of manufacturing plants throughout the United States which are working on a piece-work basis and further proof that many men desire piece work, is that, when this method of pay was abolished, a great many employees left the railroad shops and entered the service of car building and other manufacturing plants where the piece-work system of pay was in effect. Among the elements set forth in the Transportation Act for determining rates of pay is 'The training and skill required.' We hold that the piece-work system of pay affords a specific basis for compensating employees under this requirement, which at the same time is just and reasonable."

Mr. Whiter then pointed out the necessity for relief from the restrictive rules regarding employment which are interfering with output and causing delay to the movement of traffic and the fallacy of perpetuating national agreements with organizations which do not represent all the employees of a particular class on all railroads. In conclusion he said:

"We believe that the board should not approach this subject from the angle of a schedule with any organization; or that the board can properly say what organizations shall or shall not represent the employees. The subject should be dealt with from the standpoint of what are the proper regulations for the character of service under consideration, and that the question of whether they shall be applied on the individual properties, in the form of a schedule with certain organizations, depends upon the policy of the individual property and the desire of the majority of the respective classes of employees on that property."

"We firmly believe that the board will be convinced that

the widely varying conditions on the different railroads can be properly considered and disposed of only by direct negotiations on the individual properties, and will accordingly deny the request of the employees for continuation or perpetuation of the so-called 'national agreements,' together with the interpretations and rulings thereon."

B. M. Jewell Attacks Railroad Managements

Prior to Mr. Whiter's opening statement, B. M. Jewell, president of the Railway Employees Department of the American Federation of Labor, read a statement on behalf of the employees charging that the railroads have broken faith with the public, violated the Transportation Act and defrauded the public of millions of dollars. Mr. Jewell's specific charges, which he promised to substantiate later, were virtually the same as those recently filed with the Interstate Commerce Commission by W. J. Lauck on behalf of the International Association of Machinists.

To these charges, Mr. Whiter replied as follows:

"The statement made on behalf of the labor organizations this morning consists of a series of reckless general charges which their spokesman says they will not attempt to substantiate at this time and which have no relevancy whatever to the question of the continuance of National Agreements or to any other question now pending before the board."

"The apparent purpose of the labor leaders in introducing such a statement is to divert public attention from the consideration of the matters actually in controversy and under consideration by the Railroad Labor Board."

"The very fact that they are trying in this manner to divert public attention from the matters actually in controversy leads to the conclusion that they have no confidence in the real merits of their case."

"To us it is a matter of profound regret that in a hearing so important there should be injected a series of charges admittedly unsubstantiated and that these charges should be coupled with the insidious intimation that unless this Board follows a course satisfactory to the employees 'the service rendered to the public will inevitably suffer.'"

"The statement read into the record this morning will not divert us from the presentation in an orderly manner of the real question long pending before the Board."

Immediately after the hearing was opened by Chairman Barton, it was announced that several smaller organizations, not parties to the controversy which led to the Board's Decision No. 2, would be heard in the present case. Representatives of the "associated standard recognized railroad labor organizations" immediately protested against making these organizations, of which the Railroad Yardmasters of America is typical, parties to the present controversy or hearing from them during the progress of this case. However, the Board had already informed representatives of these smaller organizations that although they were not properly parties to this controversy they would be permitted to make presentations to the Board after the testimony on behalf of the organizations party to the dispute had been heard. The Board's decision was upheld by Chairman Barton, who stated that representatives of these organizations would be heard despite the opposition of the "standard" organizations.

L. E. Shepard, president of the Order of Railroad Conductors, speaking on behalf of the train service brotherhoods in Group 1, also requested the Board to give an immediate decision dealing only with the four transportation brotherhoods postponing the hearings, if necessary, to do so. This, according to Mr. Shepard, would enable these brotherhoods to promptly negotiate their contracts with the various roads and would serve to clarify the present case.

Mr. Whiter replied that, if the case of the train service brotherhoods was closed, his case would also be closed subject to the right to rebuttal statements. Mr. Whiter did,

however, request the Board to continue the hearings and render a decision for all organizations at once.

Carriers' Testimony on Shop Crafts Agreement

In presenting the carriers' opposition to the perpetuation of national agreements and the reasons therefor, Mr. Whiter took up in consecutive order the rules contained in the agreement made with the Shop Crafts approximately six months before the end of federal control. In presenting this testimony, Mr. Whiter first quoted the rule, second, outlined the carriers' objection to it and the reasons therefor, and third, cited numerous examples, either from adjustment board dockets or from the actual experiences of individual roads in working under the various rules of this agreement. These actual cases showed the impracticability of the universal application of rules which do not take into account the varying conditions on different carriers.

The presentation of material of this character continued on January 11 and 12, Mr. Whiter reading with but few interruptions. The large volume of these examples prohibits their inclusion here. However, several of those which clearly show the punitive effects of certain rules contained in the National Agreement are given below to show the character of the testimony which is being made before the Board.

How National Rules Prevent Efficient and Economical Operation

Regarding Rule 7, which provides that (1) for continuous service after regular working hours, employees will be paid one hour for 40 minutes' service or less, (2) they shall not be required to work more than one hour without being permitted to go to meals, (3) employees called or required to return to work will be allowed 5 hours for 3 hours and 20 minutes' service or less, and (4) they shall be required to do only such work as held or called for, Mr. Whiter showed the punitive effects of the rule by the following example:

"A machinist on the Florida East Coast was notified that he would be required to work overtime to finish up work already begun on an engine. He was allowed to go to his work at the proper time and upon returning found other mechanics working on the engine. Owing to the nature of his part of the work he could not begin until the other men were through. While waiting on them he was ordered to inspect another engine and make out report. This completed, he was allowed to return to the job for which he was held and complete it. He was then ordered by the foreman to complete the shift.

"The employee's position was that he is entitled to 6½ hours, 1½ hours for the first hour and 5 hours for returning for the job for which he was held over, and 5 hours (a second call) for the inspection job, with the differential of 5 cents per hour, then 5 hours (a third call) for completing the shift.

"The railroad's position was as follows: The machinist was instructed to finish the application of a pair of engine truck-wheels. He was held up by other workmen and had to wait some time. While waiting he was sent to make the usual periodical inspection on another engine. In the meantime it developed that one of the second-trick machinists did not show up and he was instructed to fill his place. We contend he is entitled to 5 hours for the engine inspection at the differential rate, and time and one-half up to 11 p. m., the finishing time of the second shift.

"The decision allowed the machinist not less than 16½ hours for the time in question, 5 hours of which will be paid for at the differential time."

Regarding this Mr. Whiter said:

"This decision penalizes the railroad for the time not worked. It will be noted that this employee was allowed three five-hour calls; also one and one-half hours' pay for

the ninth hour, a total of 16½ hours' pay for work performed within a spread of eight hours."

As an indication of the manner in which these rules operate to increase expenses and award labor an unreasonable wage for the service rendered, Mr. Whiter submitted statistics compiled by the Norfolk & Western showing the actual expense incurred under Rule 7 of the Shop Crafts Agreement. These statistics show that in the month of August, 1920, for instance, mechanics, helpers and apprentices on its lines received 4,944 calls, they worked 10,509 hours, they were paid for 24,720 hours and the punitive payments by the company totalled \$8,900.

Rule 10 of the Shop Crafts Agreement provides for the payments to be made to employees sent out on the road for emergency service. As evidence of the manner in which this rule operates to increase labor costs exorbitantly, Mr. Whiter cited the following instance which occurred on the Atchison, Topeka & Santa Fe:

On April 1, four carmen were sent from Newton, leaving at 8.25 a. m., arriving at Bader at 9.45 a. m., working from that time until 3.20 p. m., or four hours and thirty-three minutes each, renewing a truck body bolster. When the work was completed it was too late to catch a train to Newton, but by going to Strong City and awaiting the arrival of a train at 1.00 a. m., they were enabled to arrive back at Newton at 5.00 a. m., April 2. The time allowance for each man was 28 hours, or straight time from 8.00 a. m. to 5.00 p. m., time and one-half from 5.00 p. m. to 1.00 a. m., and double time from 1.00 a. m. to 5.00 a. m. The company was compelled to pay these four men a total of 112 hours at 67 cents per hour, amounting to \$75.04 for work which would have occupied the time of one man 18 hours and 12 minutes, which at 67 cents per hour amounts to \$12.20. This is a difference of \$62.84.

Regarding Rule 12 of the Shop Crafts Agreement, which provides for the payments to be made when it is necessary to fill temporary vacancies at outlying points, Mr. Whiter said in part:

"The railroads object to the interpretation of this rule which has been claimed on some roads, namely: That it is mandatory that men should be taken from their regular work in order to fill temporary vacancies at outlying points, even when such temporary vacancies might be filled by employing a man at such local point. It has been a common practice that when a man is obtainable at such outlying point, he may be employed to fill such temporary vacancy instead of sending a regular employee from the main point. There is no good reason why the employer should send a man from a home point to fill a vacancy at an outlying point and pay traveling expenses, etc., if the employer can get the work done by temporarily employing a man at the local point.

"As illustrative of the unreasonableness of this portion of the rule especially when considered in connection with the mandatory requirements that men must be sent from home station to fill a temporary vacancy, regardless of the widely varying conditions in different parts of the country and the ability at many points to have such work satisfactorily performed by the employment of men at such local points, the following is shown:

"Recently on account of a shortage of men and a heavy movement of traffic on the Norfolk & Western out of Williamson, W. Va., it was necessary to send 5 machinists from Bluefield, a distance of 101 miles. Each of these machinists worked 8 hours per day, first three days, for which they were each paid 72 hours at time and one-half for 24 hours' work, which gave to each man approximately \$52.00 for no service performed whatever, in addition to \$29.92 paid for the 24 hours' work."

Seniority shall rule in filling desirable vacancies according to Rule 18 of the Agreement. The manner in which this

rule impairs the efficiency of shop forces was shown by Mr. Whiter in reciting the following incident:

"At Havelock, Neb., on the Chicago, Burlington & Quincy, a man bid in on a machine. In about a week another machine was bulletined and this man exercised his seniority rights again. This slowed up the work on both machines. Another in the boiler shop at Havelock changed his job five times in three weeks. It should be strictly up to the foreman to fill these positions and not the crafts."

Norfolk & Western Case Completed

Hearings on the controversy between the Norfolk & Western and its trainmen and conductors before Bureau No. 3 of the Board ended on January 6. The opening session of these hearings was outlined in the *Railway Age* of January 7. The first real point of difference between the Norfolk & Western and its yard employees was indicated early in the opening session when L. B. Going, attorney for the Association of Railway Trainmen, requested permission of the Board to be heard when certain portions of the controversy were discussed. This portion of the controversy, the request of the trainmen that only "promotable" men be employed in yard service, that members of the Brotherhood of Railroad Trainmen be given preference in employment of yard men and not less than 85 per cent of all yard men be members of that organization, actually came before the Board on January 4. Val Fitzpatrick, vice-president of the Brotherhood of Railroad Trainmen, told the Board that serious consequences would result if the colored organization was heard by the Board and allowed to interfere with the progress of the present case. After executive consideration, the Board issued the following statement in reply:

"Bureau No. 3 understands that the Transportation act of 1920 imposed upon the Railroad Labor Board the duty of hearing such cases as are formally brought to its attention by the parties directly interested. Such submissions having in this case been formally made, the hearings must necessarily be confined to the parties directly interested and no others can be permitted to intervene. This ruling of Bureau No. 3 is not understood to preclude any employees who have a bona fide dispute with the railroad from bringing it to the board in accordance with the procedure outlined in the Transportation Act of 1920. The Bureau must also recognize the right of contracting parties to legislate for and represent the class of peoples with whom such contracts are executed by the carriers."

The position taken by the management in this particular portion of the controversy was that it would not concede to the rule requested because it would place an undesirable restriction on the opportunities for employment of colored men in its yards and that incorporation of the proposed rule would already complicate an already embarrassing situation. Mr. Fitzpatrick contended on the other hand that the rule was proposed to require the company to handle efficient and competent men so that those white men now in yard service would not suffer from the act of inefficient and incompetent colored employees. In support of this contention, Mr. Fitzpatrick charged that discrimination had been and was being made against white employees inasmuch as negroes have not been and are not prosecuted for rule violations whereas white yardmen are immediately disciplined. Mr. Neill, speaking for the carrier, stated that the proposed rule is aimed solely at barring the negro from a railroad yard under the guise of his not being "promotable" even though many are efficient and capable of promotion. In reply to this contention, Mr. Fitzpatrick stated that a large majority of the negro yardmen were inefficient and incapable and totally unfitted in the interest of safety to perform yard service.

Many other points in the controversy between the carrier and its employees were discussed before the Board. These include the (1) employees' request for a new rule covering the handling of baggage and joint baggage and express; (2)

employees' request for rule governing leave of absence of trainmen; (3) request for a rule pertaining to the duration of agreement; (4) the request that yardmen handling work for wreck trains in yard limits be paid yard rates instead of road rates; (5) the seniority rights of foremen; (6) compensation for yardmen called to office to make reports for statement; (7) yardmen riding cars on hump or gravity yard will not be required to control more than one car unless coupled together; (8) preference in filling switchtender positions should go to partially disabled yardmen and train service employees; (9) claim of seniority rights for certain employees; (10) requests that trainmen be assigned as baggage men; (11) various claims for adjustment for overtime for individual employees, and (12) request for a new rule relating to motor or other cars operated on schedules and orders.

Pullman Conductors Request Increased Wages

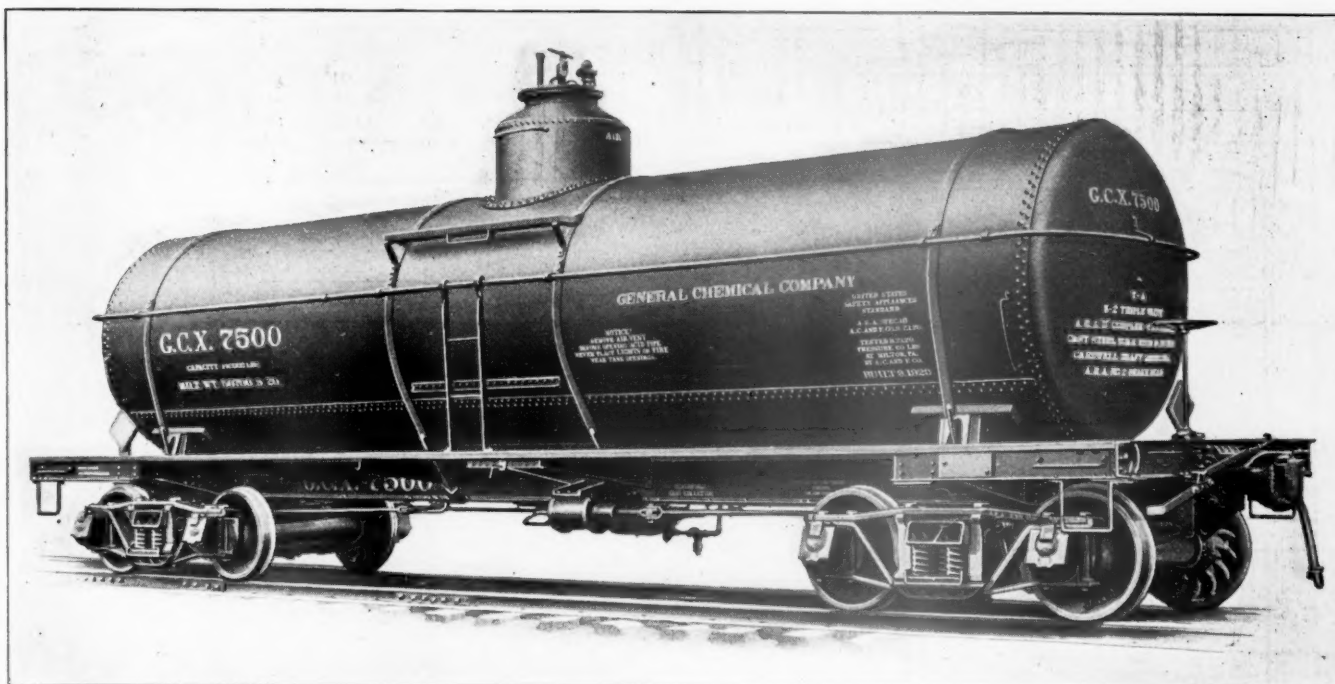
Hearings in the controversy between the Pullman Company and its conductors over wages and working conditions opened on January 5, before the full board. The employees, who are asking for an increase from the present step-rate basis of \$155.00 to \$190.00 per month for 240 hours or less in regular assignment to a step-rate basis of from \$200.00 per month or 83.55 cents per hour to \$225.00 per month or 93.75 cents per hour, were represented by M. S. Warfield, president of the Order of Sleeping Car Conductors. The company in this case was represented by F. L. Simmons, assistant to the general auditor.

During the hearing it developed that the Pullman Company had granted its employees a flat raise of \$30.00 per month following the increases awarded train service employees by the Board's decision of July 20. Mr. Warfield admitted that this increase placed sleeping and parlor car conductors on a par with other train service employees but contended that such a rate of pay does not consider the extra degree of responsibility placed upon Pullman conductors. In presenting this point Mr. Warfield said: "A higher percentage of pay for sleeping car conductors is believed to be justifiable owing to the fact that they have until September 3, 1919, the date of the application of Amendment 1 to supplement 17 to General Order 27, been the lowest paid classes in train service, their expenses away from home are heavier because their trips are longer and require a larger expenditure for food, because hotel accommodations are higher, personal attirement being exacting according to the requirements of the company and because conductors are subject to call during their sleeping hours."

The statement made by Warfield during the course of the hearings that as far as he knew Pullman conductors were now operating under Amendment No. 1 to Supplement 17 to General Order 27 was challenged by Mr. Simmons, who stated that the Transportation Act continued the rates of pay of the Railroad Administration only until September 1.

The hearings in this case continued until January 6, when the Board took the case under advisement.

A "SCHOOL OF SIGNALLING," maintained by the Lancashire & Yorkshire, has graduated in ten years 2,041 students, and at the end of the last term, December 16, the chairman of the company awarded 15 valuable prizes and 186 certificates to 201 graduates. The course, apparently, is not for signal maintainers or mechanics, but for signalmen (operators) in cabins; and a large proportion of the students appear to be station clerks, station helpers and various classes other than those who are directly engaged in signaling or are seeking employment in signal cabins. The total number enrolled in the session just closed was 1,421. The apparatus and methods of the school seem to be somewhat like American railroad schools—those on the Erie, the Pennsylvania and the New York Central, where telegraphy and station clerical work are taught.

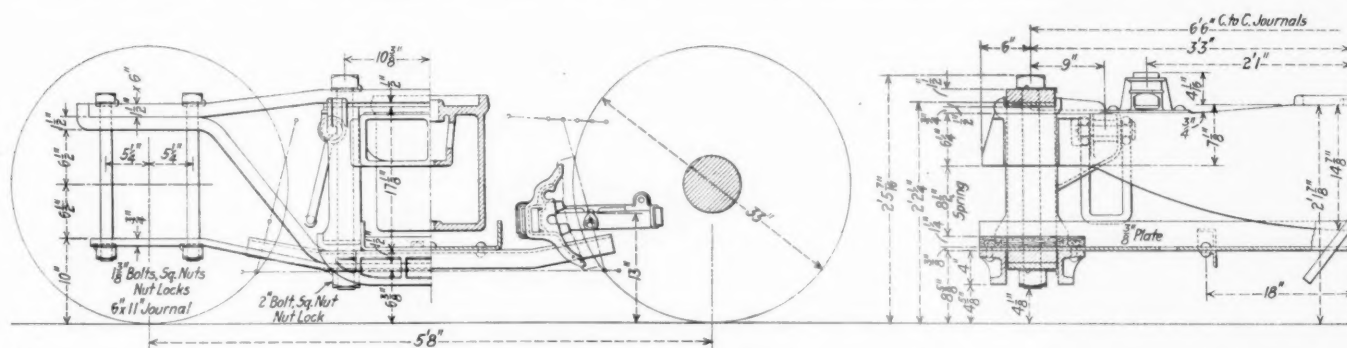


Sulphuric Acid Tank Cars of 70 Tons Capacity

Tank Made with Three Longitudinal Sheets Is Feature of Equipment Built for General Chemical Company

THE TRANSPORTATION of dangerous chemical products in large quantities has become so common that it receives but little attention from the railroads that move this traffic. To build equipment which permits handling such commodities in regular service without extraordinary precautions requires a high degree of skill in design and high-class workmanship. This is well exemplified in the recent order of 70-ton tank cars built by the American Car & Foundry Company for the General Chemical Company.

Foundry Company and the General Chemical Company, the owner's arrangement of dome fittings and outlets being applied. The tank conforms to the A. R. A. Class III tank specifications and is built to withstand a pressure of 300 lb. per square inch. The diameter inside the sheets is 85¼ in. and the length between the outer rows of rivets is 32 ft. The cylindrical section of the tank is made up of three longitudinal courses, each in one piece. The length of riveted seams is reduced considerably by this design. The bottom sheet is

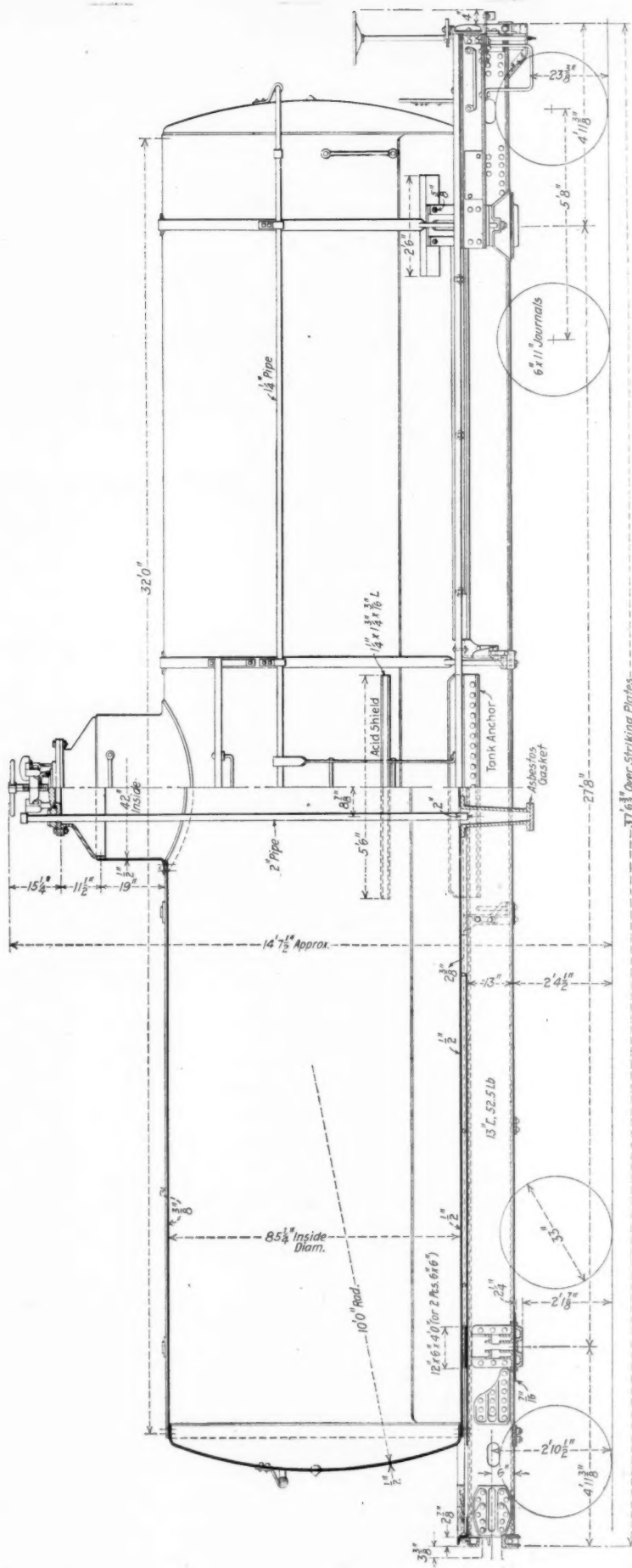
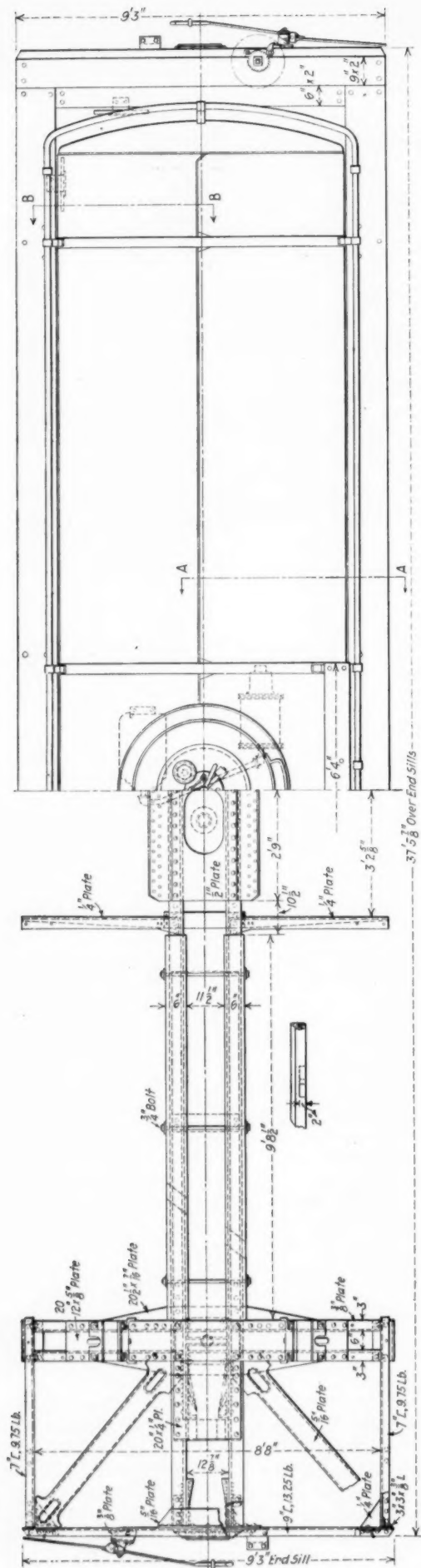


Arch Bar Truck Used with 70-Ton Tank Car

These cars have a capacity of 9,800 gal. of sulphuric acid. The concentrated acid is nearly twice as heavy as water and if any considerable quantity of water comes in contact with the liquid, a violent explosion will occur. For this reason, the tanks must be strong, absolutely free from leaks and the dome must be tightly sealed.

With the exception of two cars built for the General Chemical Company in 1916, the fifty cars on this order are, so far as known, the first 70-ton acid tank cars constructed. The design was worked up jointly by the American Car &

Foundry Company and the General Chemical Company, the owner's arrangement of dome fittings and outlets being applied. The tank conforms to the A. R. A. Class III tank specifications and is built to withstand a pressure of 300 lb. per square inch. The diameter inside the sheets is 85¼ in. and the length between the outer rows of rivets is 32 ft. The cylindrical section of the tank is made up of three longitudinal courses, each in one piece. The length of riveted seams is reduced considerably by this design. The bottom sheet is



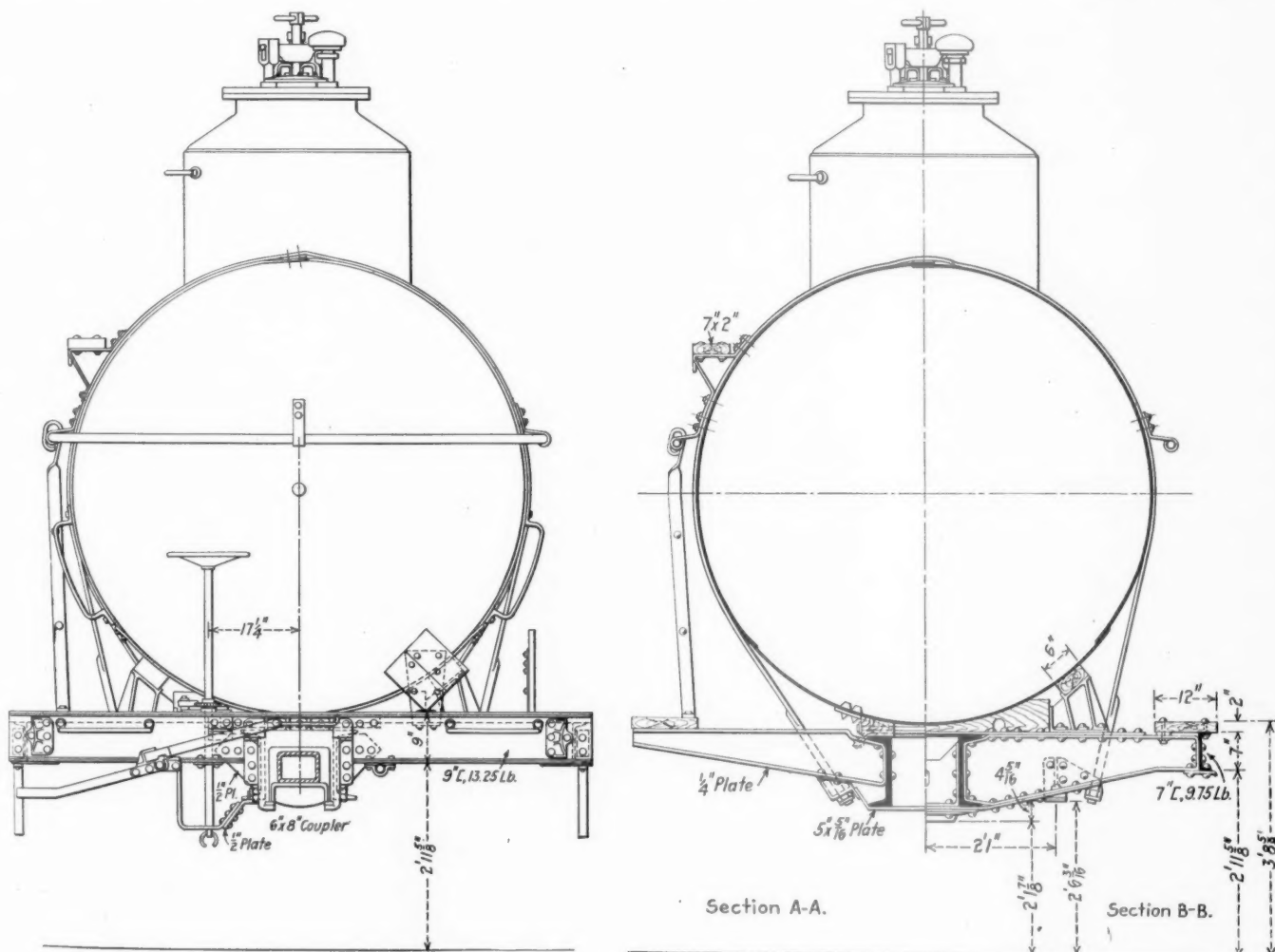
Plan and Side Elevation of General Chemical Company 70-Ton Acid Tank Car

able yoke which fits into two toggle bars on the main dome cover.

The center member of the underframe is made of two 13 in. 52.5 lb. channels spaced 12 $\frac{7}{8}$ in. apart. These extend continuously from end sill to end sill and are reinforced by a $\frac{1}{4}$ in. cover plate 20 in. wide. The bolsters are built up of pressed sections of $\frac{3}{8}$ in. plate with top and bottom cover plates. The end construction comprises a 9 in., 13.25 lb. channel; short side sills of 7 in. 9.75 lb. channels; and diagonal braces of 5/16 in. plate. The running boards are supported by pressed steel cross bearers. A $\frac{1}{2}$ in. anchor plate extends across the center of the underframe and the

each side of the bolster. An additional support is provided along the center sill by wedge-shaped wooden stringers which can be drawn together by transverse bolts.

The trucks, which are of the arch bar type, have a base casting spanning the bottom of the bolster opening. This furnishes a means of attachment for the spring plank and also provides support for the lower end of the pedestal column. Many of the specialties applied to these cars were furnished by the General Chemical Company including the safety vent, outlet castings, dome heads and fittings and all tank gaskets. Other equipment includes Cardwell G-11-A draft gear, Westinghouse type KD-1012 brake equipment,



End Elevation and Cross Section of General Chemical Tank Car

outer edges are bent down to conform with the outline of angle-shaped anchor plates riveted to the tank. The arrangement of the two parts of the anchor is such that the underframe is given a slight downward camber at the center and the tank is relieved of any stresses due to buffing shocks which otherwise would be transmitted to the sheets. The rivets which join the tank and the underframe are made readily accessible by this arrangement so that they can be riveted by machine and the tank can be removed for repairs without cutting any of the rivets in the tank itself. Practically all center anchorages on tank cars have been bolted to the underframe as outlined in the tank car specifications and a riveted anchor is a comparatively recent innovation. An acid shield on each side of the tank protects the anchorage and the air brake equipment in case acid is spilt from the dome while the tank is being filled or emptied. The ends of the tank rest on wood saddles held by bracket castings on

National journal boxes with coil spring lids, Huntoon brake beams and Stucki side bearings. The average light weight of the cars is 50,400 lb.

THE BROTHERHOOD OF RAILWAY TRAINMEN is to build a permanent home for the order in Cleveland, a bit of news which emphasizes anew the increasing importance of this city. The engineers with their magnificent structure at Ontario and St. Clair and their recently opened co-operative national bank have long been a feature of local life. The Brotherhood of Firemen maintain national headquarters in Cleveland and own a building site on Superior avenue, west of the square. A firemen's building is a probability of the future. The conductors have long been located at Cedar Rapids, Ia., but are now considering a proposal to join the other three in Cleveland. Such a move on their part would make this city the undisputed center of organized transportation employees.—*Cleveland (Ohio) Plain Dealer.*

Car Loading Again Decreases

WASHINGTON, D. C.

THE NUMBER OF CARS loaded with revenue freight during the week ended January 1, 1921, which includes the New Year holiday, was less even than the loading during Christmas week, which was less than for any week in 1920 except one week during the switchmen's strike last April, according to the weekly report of the Car Service Division of the American Railway Association. The total was 598,905, as compared with 745,446 during the corre-

travel at all. In fact, the higher rates will have a healthy effect. It will possibly stop a lot of very useless travel, and help the great congestion on passenger trains so that legitimate travel can enjoy a reasonable degree of comfort. For the past four months I have been forced to travel a great deal. I can hardly secure a berth on a sleeper without reservation days ahead, and often have to stand in passenger cars. The slowing up of all kinds of business has reduced freight tonnage a great deal; the rate had nothing to do with this. If freight were hauled free now there would be no more tonnage. Harris is wrong; the rates should be slightly

REVENUE FREIGHT LOADED AND RECEIVED FROM CONNECTIONS

Summary—All Districts, Comparison of Totals This Year, Last Year, Two Years Ago. For Week Ended Saturday, January 1, 1921

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L. C. L.	Miscellaneous	Total revenue freight loaded			Received from connections		
										This year 1921	Corresponding year 1920	Corresponding year 1919	This year 1921	Corresponding year 1920	Corresponding year 1919
Eastern	1921	4,849	2,879	44,336	1,510	5,296	1,011	34,779	46,791	141,451	186,940	148,811	178,888	223,210	185,825
	1920	5,860	3,769	48,103	3,862	7,385	1,050	28,929	87,982	137,711	151,186	145,029	99,782	114,726	137,302
Allegheny	1921	2,205	3,252	51,840	5,945	2,930	2,333	28,542	40,664	137,711	151,186	145,029	99,782	114,726	137,302
	1920	2,550	2,989	52,904	3,274	3,771	1,561	34,052	50,085	137,711	151,186	145,029	99,782	114,726	137,302
Pocahontas	1921	78	85	17,857	361	1,259	29	1,875	4,144	25,688	32,641	24,764	12,597	16,402	15,266
	1920	114	78	23,050	610	1,447	236	130	6,976	25,688	32,641	24,764	12,597	16,402	15,266
Southern	1921	2,388	1,812	24,299	724	9,736	1,759	26,916	22,546	90,180	118,864	86,465	49,883	74,055	54,918
	1920	3,105	2,853	30,734	131	15,930	2,302	16,864	46,945	90,180	118,864	86,465	49,883	74,055	54,918
Northwestern	1921	8,187	6,682	6,416	1,272	6,528	1,090	18,516	16,778	65,469	94,234	84,021	36,076	50,708	52,439
	1920	11,756	9,729	12,653	936	10,742	1,236	15,871	31,311	65,469	94,234	84,021	36,076	50,708	52,439
Central Western	1921	9,157	7,626	20,910	252	2,155	1,701	21,525	26,796	90,122	109,000	84,289	40,380	66,444	44,832
	1920	9,565	10,851	24,083	375	3,781	2,308	19,281	38,756	90,122	109,000	84,289	40,380	66,444	44,832
Southwestern	1921	3,234	1,614	4,566	486	4,731	417	12,504	20,732	48,284	52,581	39,362	35,931	45,892	34,473
	1920	3,647	2,128	7,257	473	4,932	548	11,160	22,436	48,284	52,581	39,362	35,931	45,892	34,473
Totals, all roads..	1921	30,098	23,950	170,224	10,550	32,635	8,340	144,657	178,451	598,905	745,446	612,741	435,537	591,437	525,055
	1920	36,597	32,397	198,784	9,661	47,988	9,241	126,287	284,491	745,446	745,446	612,741	435,537	591,437	525,055
	1919	32,396	33,715	158,068	.....	35,734	12,832	.....	339,996	.....	.....	612,741	.....	.....	525,055
Increase Compared..	1920	.....	.....	.....	889	.....	.....	18,370	.....	.....	.....	.....	.....	.....	.....
Decrease Compared..	1920	6,499	8,447	28,560	.....	15,353	901	.....	106,040	146,541	.....	.....	137,900	.....	.....
Increase Compared..	1919	.....	.....	12,156	10,550	.....	.....	144,657	.....	.....	.....	.....	.....	.....	.....
Decrease Compared..	1919	2,298	9,765	.....	.....	3,099	4,492	.....	161,545	13,836	.....	.....	71,518	.....	.....
December 25.....	1920	29,147	19,814	177,308	10,956	39,314	2,497	158,918	194,321	639,275	684,784	549,975	514,363	588,644	562,602
December 18.....	1920	35,505	30,470	223,153	12,750	48,626	14,127	186,997	245,230	796,858	806,734	796,116	587,099	576,770	672,533
December 11.....	1920	36,820	31,799	230,396	13,904	51,194	17,673	193,143	259,968	834,897	761,940	820,202	614,178	596,785	683,649
December 4.....	1920	37,109	30,903	230,228	15,643	53,971	27,195	195,571	281,542	872,162	789,286	837,806	605,876	589,350	657,758

L. C. L. merchandise loading figures for 1921 and 1920 are not comparable, as some roads are not able to separate their L. C. L. freight and miscellaneous of 1920. Add merchandise and miscellaneous columns to get a fair comparison.

sponding week of 1920 and 612,741 during the corresponding week of 1919 and 641,057 in 1918. During one week of April, 1920, the loading fell to 584,000 and during one week of December, 1918, it was only 550,000. With those two exceptions, the loading for the week ending January 1 was the lowest that has been recorded for three years. The summary as reported by the Car Service Division is given in the table.

One View of the Rate Question

THE INTERSTATE COMMERCE COMMISSION is receiving a good many letters of complaint from various persons that freight and passenger rates are too high. In a recent issue we published some extracts from correspondence between Senator Harris of Georgia, who expressed a desire to see lower rates, and Chairman Clark of the commission, who pointed out to the senator some of the reasons why rates had to be advanced. The commission has since received a letter from one of the senator's constituents, N. K. Smith, president of the Golden Rule Case Stores, Milledgeville, Ga., who disagrees with the senator on the subject. He says:

"I note that Senator Harris is in favor of lowering freight rates. I beg to state he is in error. Freight and passenger rates are if anything too low yet. The freight rates do not now affect the price of goods hardly to any perceptible degree. And passenger rates are not high enough to retard

advanced in both passenger and freight. Railroads must be efficient and give service and they can't do it and pay the high union wages they have to pay without higher rates."



Photo from Underwood & Underwood, N. Y.

The M. K. & T. Station at San Antonio, Texas

General News Department

The Buffalo, Rochester & Pittsburgh has discontinued its Employee's Magazine with the January issue in the interest of economy.

Colonel Frederick Mears, chairman and chief engineer of the Alaska Engineering Commission, in charge of the Government railway in Alaska, is to address the Western Society of Engineers, Chicago, on January 20, on Alaska and Alaskan railways.

The Interstate Commerce Commission has ordered a proceeding of inquiry and investigation as to the cost of railroad fuel in 1920 in response to a Senate resolution directing it to report the increased cost of railroad fuel in 1920 over that for 1919.

Appropriate legislation making it possible for the railroads to collect immediately a portion of the \$400,000,000 due them under the guaranty provisions of the Transportation Act is urged in a resolution adopted by the board of directors of the Chamber of Commerce of the United States.

The next regular meeting of the New York Railroad Club will be held at the Engineering Societies' Building, New York City, on Friday evening, January 21, 1921, at eight o'clock. Samuel O. Dunn, editor of the *Railway Age*, will address the club on the subject of "Is the Railroad Problem Really Being Solved?"

The Atchison, Topeka & Santa Fe on January 10, withdrew from its joint use of the Oakland Mole terminal of the Southern Pacific, and its trains now run to and from its own terminal at Ferry Point, Richmond. The withdrawal was made possible by the revocation of the order of the Railroad Commission of the state of California that the Santa Fe must remain at the Oakland Mole.

Senator Trammell, of Florida, on January 10 introduced in Congress a bill to require a reduction in rates charged by the railroads by amending Section 15-a of the interstate commerce act to provide that the fair return, which under the law is 5½ per cent, with a possible addition of ½ per cent, in the discretion of the Interstate Commerce Commission, shall not exceed 4 per cent on the aggregate value of railroad property.

The directors of the American Railway Association, at a meeting in New York on January 6, elected Daniel Willard (B. & O.), chairman of the board and re-elected R. H. Aish-ton president of the association. W. G. Besler (C. of N. J.), was chosen first vice-president, in place of W. T. Tyler, and Hale Holden (C. B. & Q.), second vice-president in place of E. H. Coapman. J. E. Fairbanks is general secretary and treasurer.

Peter Bronski and S. Kalonowsky, section men on the Chicago & Erie, were presented with \$50 each as a reward for their honesty in turning over to the proper authorities four bags containing Liberty Bonds, drafts, leases, wills, notes and certificates of deposit valued at approximately \$500,000, which they found near the track at Highlands, Ind. The property had been stolen from the National Bank of Clifton, Ill., on the night of November 19.

The record of efficiency tests and observations in the Eastern Region of the Pennsylvania for October shows an average of 99.9 per cent perfect; number of tests 37,427; failures, 40. Five divisions—Cumberland Valley, Tyrone, Trenton, Norfolk and Elmira—with a total of 8,189 tests, had a perfect score; seven divisions—Cresson, Juniata, Atlantic, Baltimore, Delaware, Schuylkill and Philadelphia Terminal—had one failure each out of a total of 12,946 tests.

Senator Robinson of Arkansas on January 11 introduced in the Senate a bill providing that after July 1, 1924, all cars or parts of cars used for transporting baggage and express in interstate commerce shall be of such construction and character and furnished in such manner as shall be required by the Interstate Commerce Commission. The bill also provides that after that date the commission shall not allow to be used any full railway baggage or express car which is not constructed of steel or of steel underframe or equally indestructible material.

Wisconsin is the first state to get to the Supreme Court of the United States in an effort to overturn the decisions of the Interstate Commerce Commission ordering increases in intrastate passenger fares to correspond to the increases in interstate rates allowed by the Interstate Commerce Commission. The Public Service Commission and the attorney general of the state have filed an appeal from the decision of the United States Court for the Eastern district of Wisconsin, under which the railroads of the state obtained an injunction to prevent state interference with the federal commission's order.

Surpluses of freight cars in the United States, as reported to the Car Service Division of the American Railway Association, for the week ending December 31, amounted to 197,733 cars, this being the daily average for the six days. It is almost four times as large as the average one month previous. For the same period the average number of cars short—total deferred car requisitions—was 3,808, which is less than one-fifth the reported averages one month before. The surpluses largely exceeded the shortages in all classes of cars; but in the week ended December 23 the balance of gondola cars was the other way, to give the exact figures 4,711 surpluses and 6,974 shortages.

Employees of the Atlanta, Birmingham & Atlantic, following a conference of their representatives with B. L. Bugg, president, say that they will insist on having a proposed general reduction in wages passed on by the government labor board. President Bugg told them that the reduction in wages which had been announced by the company on December 29 must be put into effect on February 1, the reduction to be a sum equal to one half of the total advances which have been made in wages of employees since December, 1917. He said that the reduction would affect operating expenses to the extent of \$100,000 a month, and presented a statement showing that in September, October and November the road had failed to meet operating expenses by about \$98,000 a month.

President Samuel Rea, of the Pennsylvania Railroad, has issued a circular to employees to whom annual or other passes are issued, reminding them that the privilege of free transportation carries with it a duty to surrender seats in crowded trains to pay passengers. Even with a slackening of traffic, says the circular, the passenger facilities will in all probability continue to be somewhat overtaxed for some time to come. This duty may be performed without embarrassment to any one, and without attracting needless attention, by simply arising and moving to another part of the car or train. "Patrons, on all occasions, should be treated as guests, and whenever any question arises, we should sacrifice our own individual comfort for theirs. The railroads are judged in the public's mind as much by the conduct of their employees as by any other single factor. What the public thinks of the railroads, whether good or evil, will inevitably in its turn react upon the welfare of every one of us. It is, therefore, to our direct personal interest to give every passenger the best possible impression."

Automobile drivers to the number of 3,886 were warned during the month of October by Pennsylvania Railroad watchers, assigned to grade crossings to check up careless people. These warnings were served through officers of the states of New Jersey and Pennsylvania. These watchers consumed a total of 3,043 hours of time in their work, and it appears that 8.7 per cent of all automobilists driving over grade crossings failed to observe proper caution. The railroad's campaign was begun in July and has been conducted in co-operation with the commissioner of highways of Pennsylvania and the commissioner of motor vehicles of New Jersey. On the evening of November 29, an automobile disregarded a watchman's signal at the gas house crossing at Carlisle, Pa., although the warning was given when the automobile was 300 ft. from the track. The driver attempted to cross; his motor stopped while he was on the tracks and a fatal accident was averted only by the prompt action of the watchman, who ran east along the track and flagged the approaching passenger train. During the first six months of last year 47 persons were killed and 162 injured in accidents to automobiles at grade crossings on the Pennsylvania system, while in the same period of the year before, 58 were killed and 146 injured.

Reunion of Construction Division U. S. A.

The annual reunion of those who were identified with the Construction Division of the Army during the war will be held at the Morrison Hotel, Chicago, on February 25 and 26. The afternoon of the first day and the morning and afternoon of the second day will be devoted to business sessions, and the annual banquet will be held on the evening of February 26.

The membership of the Construction Division Association consists of those who served in the Construction Division of the Army during the war, either in uniform or as civilians. The officers are: President, Col. Clark C. Wright, of George C. Nimmons & Co., 122 South Michigan avenue, Chicago; vice-president, Col. J. N. Willcutt, of R. D. Willcutt & Sons Company, Boston, Mass.; secretary, Major George Gibbs, Jr., Washington, D. C.; assistant secretary, William Kennedy, office of Col. Evan Shelby, 63 Wall street, New York; and treasurer, Major A. C. King, 8 South Dearborn street, Chicago. Col. E. C. Stockdale, of Page & Hill, 19 South La Salle street, Chicago, is chairman of the entertainment committee.

Roads Must Have Legislation to Collect Guaranty

Chief Justice McCoy, of the Supreme Court of the District of Columbia, on January 3, rendered a decision sustaining the recent decision of the comptroller of the treasury that the secretary of the treasury may not make partial payments to the railroads, on account of their guaranty for the six months following the termination of federal control, in advance of a final audit by the Interstate Commerce Commission showing the entire amounts due. The court denied the application of the Grand Trunk Western for a writ of mandamus to compel the secretary of the treasury to honor a certificate for \$500,000 issued by the Interstate Commerce Commission. The application for the writ was filed as a test to determine the rights of the railroads generally to whom between \$300,000,000 and \$400,000,000 is due on account of the guaranty. The court disagreed with the contention of counsel for the railroad company that the expression "several amounts" in the transportation act indicated that Congress intended that partial payments might be made. The court construed the word "several" as meaning respective payments to the several roads, not several payments to a single road. An effort will be made to expedite the payment of the guaranty by seeking legislation such as is recommended by the Interstate Commerce Commission in its annual report to provide clearly that partial payments may be made without awaiting the long process of final adjustment of the exact amount.

Railway Executives Meet

The member roads of the Association of Railway Executives met on January 7 in the board room of the New York, New Haven & Hartford, Grand Central Terminal, New York. A resolution was adopted endorsing the Frelinghuysen bill to amend Section 10 of the Clayton act so as to exempt inter-company transactions within a given railroad system from

the competitive provisions of the act. Counsel A. P. Thom was instructed to lend his support toward securing the passage of the bill presented by Representative Winslow amending the Transportation Act so as to authorize the Treasury Department to make partial payments on account of the six months' guaranty to the carriers in advance of final payments.

W. J. Harahan, president of the Chesapeake & Ohio, and E. J. Pearson, president of the New York, New Haven & Hartford, were elected to the standing committee. The election of R. H. Aishton as president of the American Railway Association was approved, as was also the decision of the American Railway Association to continue the Car Service Division with W. L. Barnes as manager. A report on the American Railway Express Company was read which had to do with the form of contract between that company and the carriers. The framing of tariff regulations governing the prepayment of charges on freight shipments to Canada was discussed and referred to the Railway Accounting Officers' Association for adjustment.

Howard Elliott, chairman of the board of directors of the Northern Pacific, on behalf of the members of the Association of Railway Executives, presented T. DeWitt Cuyler, chairman of the association, with an old English silver salver and a letter testifying to his accomplishments as chairman, as a token of appreciation of his services "to the American railroads and the American public."

A. R. E. A. Nominates Officers

The nominating committee of the American Railway Engineering Association has selected the following candidates for officers for the ensuing year:

President, L. A. Downs, vice-president and general manager, Central of Georgia, Savannah, Ga.; vice-president, E. H. Lee, vice-president and general manager, Chicago & Western Indiana, Chicago; secretary, E. H. Fritch, Chicago; treasurer, G. H. Bremner, district engineer, Bureau of Valuation, Interstate Commerce Commission.

Directors (three to be elected): A. M. Burt, assistant to vice-president—operation, Northern Pacific, St. Paul, Minn.; C. F. W. Felt, chief engineer, Atchison, Topeka & Santa Fe System, Chicago; J. V. Hanna, chief engineer, Kansas City Terminal, Kansas City, Mo.; F. G. Jonah, chief engineer, St. Louis-San Francisco, St. Louis, Mo.; B. H. Mann, signal engineer, Missouri Pacific, St. Louis, Mo.; G. J. Ray, chief engineer, Delaware, Lackawanna & Western, Hoboken, N. J.; A. O. Ridgway, assistant chief engineer, Denver & Rio Grande, Denver, Col.; H. L. Ripley, valuation engineer, New York, New Haven & Hartford, Boston, Mass.; Geo. H. Webb, chief engineer, Michigan Central, Detroit, Mich.

Members of Nominating Committee (five to be elected): J. R. W. Ambrose, chief engineer, Toronto Terminals, Toronto, Ont.; R. H. Ford, assistant chief engineer, Chicago, Rock Island & Pacific, Chicago; E. A. Hadley, chief engineer, Missouri Pacific, St. Louis, Mo.; C. P. Howard, senior civil engineer, Bureau of Valuation, Interstate Commerce Commission, Chicago; R. H. Howard, chief engineer, maintenance of way, Wabash, St. Louis, Mo.; C. E. Johnston, general manager, Kansas City Southern, Kansas City, Mo.; A. Montzheimer, chief engineer, Elgin, Joliet & Eastern, Joliet, Ill.; J. V. Neubert, engineer, maintenance of way, New York Central, New York; Frank Ringer, chief engineer, Missouri, Kansas & Texas, St. Louis, Mo.; A. F. Robinson, bridge engineer, Atchison, Topeka & Santa Fe System, Chicago.

November Earnings \$41,544,063 Short of Estimate

Reports made by the railroads to the Interstate Commerce Commission show that the net railway operating income for November of the Class I railroads was \$57,741,937, which is \$41,544,063 or 41.8 per cent below the amount which it was estimated would be earned under the increased rates fixed in August by the commission in accordance with the Transportation Act.

The tabulation is based on reports received from 200 railroads with a total mileage of 229,754 miles.

Upon the basis of this operating income, the carriers would earn annually approximately 3½ per cent on the value of their properties as tentatively fixed for rate making purposes by the commission, says a statement issued by the Association of Railway Executives. This is 1.1 per cent below that

estimated on the basis of October earnings. To have realized a return of 6 per cent on their valuation as provided by the Transportation Act, the railroads should have earned \$99,286,000 as their November quota.

Total operating revenues for November were \$568,697,087, or an increase of 34.6 per cent over those for the same month last year, which, however, was marked by the coal strike. Total operating expenses were \$485,466,885, or an increase of 29.2 per cent compared with the same previous month. While the net railway operating income is an increase of 170.8 per cent over that for November 1919, this increase is principally due to the strike of bituminous coal miners during that month one year ago, which greatly reduced the freight tonnage.

Compilations show, however, that for the first quarter since the expiration of the guaranty period on September 1, the net railway operating income totals \$219,507,735, which is \$101,449,265 less than was estimated would be earned under the rates fixed by the commission and effective on August 26 last. On the basis of that net operating income for the three months' period, the carriers would earn 4.1 per cent annually. To have earned 6 per cent upon their tentative valuation, their net operating income should have been \$320,957,000 during that period.

As in the case of September and October, the net operating income in every district fell below the 6 per cent return during November. Calculating on the basis of the showing for November, the railroads in the Eastern district would earn 3.06 per cent upon their tentative valuation, the Southern district 3.12 per cent and the Western district 3.96 per cent.

A New Year's Greeting

President Samuel Rea, of the Pennsylvania Railroad, has addressed to the public a New Year's message in the form of a poster which appears on all public and employees' bulletin boards on the road. This bulletin says, in part:

More than 250,000 men operate this railroad. It is the largest public service institution in the world. It represents more than two billion dollars of the invested savings of our citizens. The Pennsylvania Railroad Company has 131,115 stockholders, of whom 62,795 are women. Nearly every insurance policy holder or saving-fund depositor in this country has a personal stake in its welfare, through the investments of our banks and protective institutions. Many educational and charitable organizations, as well, have their endowments in its securities. The public service rendered by it in the movement of passengers and freight is equivalent to one-eighth of that of the combined railroads of the United States. The road has 27,000 miles of track, 8,000 locomotives and 300,000 cars. These are of the highest standard, and designed to promote public safety and convenience.

But it is the men of the Pennsylvania Railroad who, by ability, loyalty, initiative and faithful work, make the service what it is. The tasks of these men are not easy, and are seldom showy. They must be performed day and night, weekdays and Sundays, in storm and in cold and regardless of difficulties. Since the company resumed the management of its property the percentage of passenger trains arriving on time has been constantly increasing and the average speed of the movement and delivery of freight has steadily improved. The aim of the management is to promote the enthusiasm of every officer and employee in behalf of a high standard of public service.

That there may be progressive improvement in the service rendered to the public, our passengers, shippers and friends are invited to commend directly to the men notably praiseworthy acts upon the part of the railroad employees, and to bring such acts in detail to the attention of the management.

CANADA AND ITALY.—A new direct steamship service between Montreal and Italian ports, using St. John in the winter, is announced by the Canadian Pacific Ocean Services; an arrangement with the Navigazione Generale Italiana for sailings to Genoa and Naples, the latter to be the terminal point. The Navigazione Generale Italiana will employ one of its finest passenger ships, in conjunction with a German vessel, recently acquired by the Canadian Pacific, to be renamed the "Montreal."

Traffic News

Southeastern Express Company

Since the Interstate Commerce Commission has approved the merger of the express companies into the American Railway Express Company and the form of contract proposed by the express company and offered by it to the railroads to provide for the division of earnings and expenses on express business, there has been some speculation as to the intentions of the Southeastern Express Company, which was incorporated in Alabama on October 6, 1920, "to own and operate a railway express business in the Southeast and elsewhere." This company has for directors and officers men connected with some of the strongest banks in the South, some of whom are directors of leading railroads. While no announcement has been made, it is known that some of the Southern roads were opposed to signing the contract proposed by the American Railway Express Company, claiming that some of its provisions are unfair to the railroads and that they were especially opposed to the unification of the express business and it is believed that the new Southeastern company may shortly enter the field as a competitor of the American Railway Express.

Passenger Traffic in September

More passengers were carried by the railroads in September, 1920, after the increase in passenger fares, than were carried in September, 1919, according to statistics just issued by the Interstate Commerce Commission, but the average journey was slightly shorter. The number of revenue passengers carried was 104,351,950, as compared with 103,204,614 in September, 1919, but the average journey per passenger was only 41.25 miles, as compared with 41.84. As a result the passenger-miles decreased from 4,318,000,000 to 4,294,000,000. The average fare paid by each passenger was \$1.23, as compared with \$1.06 in September, 1919, and the average per mile was 2.99 cents, as compared with 2.54.

On the other hand, the number of tons of freight offered the railroads for transportation during September was slightly less than in September, 1919, 203,913,000,000, as against 207,000,000,000, but the average haul on each railroad was longer, 186.06 miles as against 173.33 miles. The average revenue per ton per mile was 1.15 cents as against .95 cents in 1919. This represents an increase of 20 per cent, showing that a considerable volume of freight was handled in September that had been given to the railroads before August 26, when the rate increases of 25 to 40 per cent went into effect.

Operating Statistics for October

The Interstate Commerce Commission's summary of operating statistics for October shows a slight decrease in some of the factors measuring the operating efficiency of the railroads as compared with the returns for September and August, although the average mileage per car per day for the month, 28.6, exceeded that for any preceding month in 1920. The net ton miles, including non-revenue freight, totaled 42,252,000,000, which represents an increase of 4.7 per cent over October, 1919. The average train load was 756 tons as compared with 753 in October, 1919, but in September the average had been 767 and in August 788. The net ton miles per car day average 564 as compared with 526 in October, 1919, but in September the average was 568. The average car load, 30 tons, was one-tenth of a ton less than the average for August and September, but it exceeded the average for October, 1919, by 1.8 tons. The percentage of unserviceable cars was 7.3, which is the same as was reported in October, 1919. The average cost per freight train mile, selected accounts, for the month was \$2.15 as compared with \$1.60 in October, 1919. The cost per passenger train mile, selected accounts, was \$1.16 as compared with 90 cents. The average cost of coal per net ton was \$4.77 as compared with \$3.16 in October, 1919.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1920

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after income tax.	Increase (or decrease) last year.
		Freight.	Passenger.	Total (inc. misc.)	Maintenance of way and structures.	Equipment.	Traffic.					
Alabama & Vicksburg.....	Nov. 141	245,888	64,774	310,662	77,050	80,231	9,088	124.78	81,758	96,435	100,932	143,116
Ann Arbor.....	Nov. 293	2,137,052	803,458	2,940,510	658,163	630,350	74,325	90.20	313,744	188,697	181,559	41,879
Ann Arbor.....	Nov. 293	2,137,052	803,458	2,940,510	658,163	630,350	74,325	90.20	313,744	188,697	181,559	41,879
Ann Arbor.....	Nov. 293	2,137,052	803,458	2,940,510	658,163	630,350	74,325	90.20	313,744	188,697	181,559	41,879
Atchison, Topeka & Santa Fe.....	Nov. 8,830	13,891,559	4,932,387	18,823,946	3,795,040	4,236,512	313,340	76.62	47,562,224	3,796,559	3,828,317	1,076,670
Atchison, Topeka & Santa Fe.....	Nov. 8,830	13,891,559	4,932,387	18,823,946	3,795,040	4,236,512	313,340	76.62	47,562,224	3,796,559	3,828,317	1,076,670
Atchison, Topeka & Santa Fe.....	Nov. 8,830	13,891,559	4,932,387	18,823,946	3,795,040	4,236,512	313,340	76.62	47,562,224	3,796,559	3,828,317	1,076,670
Gulf, Colorado & Santa Fe.....	Nov. 1,907	2,190,173	550,231	2,740,404	689,280	563,762	48,558	99.08	431,211	48,641	387,134	115,302
Gulf, Colorado & Santa Fe.....	Nov. 1,907	2,190,173	550,231	2,740,404	689,280	563,762	48,558	99.08	431,211	48,641	387,134	115,302
Gulf, Colorado & Santa Fe.....	Nov. 1,907	2,190,173	550,231	2,740,404	689,280	563,762	48,558	99.08	431,211	48,641	387,134	115,302
Northwestern Pacific.....	Nov. 536	345,162	201,430	546,592	148,227	133,084	6,215	97.18	17,424	13,023	24,897	115,515
Northwestern Pacific.....	Nov. 536	345,162	201,430	546,592	148,227	133,084	6,215	97.18	17,424	13,023	24,897	115,515
Northwestern Pacific.....	Nov. 536	345,162	201,430	546,592	148,227	133,084	6,215	97.18	17,424	13,023	24,897	115,515
Panhandle & Santa Fe.....	Nov. 857	713,456	1,621,551	2,335,007	247,384	307,263	7,219	101.56	14,273	22,469	58,835	103,834
Panhandle & Santa Fe.....	Nov. 857	713,456	1,621,551	2,335,007	247,384	307,263	7,219	101.56	14,273	22,469	58,835	103,834
Panhandle & Santa Fe.....	Nov. 857	713,456	1,621,551	2,335,007	247,384	307,263	7,219	101.56	14,273	22,469	58,835	103,834
Atlanta & West Point.....	Nov. 93	112,674	107,215	219,889	35,207	45,473	6,202	83.99	39,749	32,345	26,369	40,678
Atlanta & West Point.....	Nov. 93	112,674	107,215	219,889	35,207	45,473	6,202	83.99	39,749	32,345	26,369	40,678
Atlanta & West Point.....	Nov. 93	112,674	107,215	219,889	35,207	45,473	6,202	83.99	39,749	32,345	26,369	40,678
Atlanta, Birmingham & Atlantic.....	Nov. 639	1,315,553	84,323	1,400,876	103,706	125,607	25,346	79.02	581,488	48,554	420,672	3,290
Atlanta, Birmingham & Atlantic.....	Nov. 639	1,315,553	84,323	1,400,876	103,706	125,607	25,346	79.02	581,488	48,554	420,672	3,290
Atlanta, Birmingham & Atlantic.....	Nov. 639	1,315,553	84,323	1,400,876	103,706	125,607	25,346	79.02	581,488	48,554	420,672	3,290
Atlantic Coast Line.....	Nov. 4,886	3,787,598	1,562,245	5,349,843	1,137,947	1,541,244	108,363	103.22	187,768	444,219	348,282	807,471
Atlantic Coast Line.....	Nov. 4,886	3,787,598	1,562,245	5,349,843	1,137,947	1,541,244	108,363	103.22	187,768	444,219	348,282	807,471
Atlantic Coast Line.....	Nov. 4,886	3,787,598	1,562,245	5,349,843	1,137,947	1,541,244	108,363	103.22	187,768	444,219	348,282	807,471
Baltimore & Ohio.....	Nov. 5,153	18,982,058	2,768,647	21,750,705	2,916,578	6,078,818	236,689	88.78	2,612,796	2,069,067	1,632,362	1,119,216
Baltimore & Ohio.....	Nov. 5,153	18,982,058	2,768,647	21,750,705	2,916,578	6,078,818	236,689	88.78	2,612,796	2,069,067	1,632,362	1,119,216
Baltimore & Ohio.....	Nov. 5,153	18,982,058	2,768,647	21,750,705	2,916,578	6,078,818	236,689	88.78	2,612,796	2,069,067	1,632,362	1,119,216
Baltimore & Ohio Chicago Term.	Nov. 90	.....	288,019	288,019	34,008	46,796	1,687	98.97	2,525	28,644	53,656	24,305
Baltimore & Ohio Chicago Term.	Nov. 90	.....	288,019	288,019	34,008	46,796	1,687	98.97	2,525	28,644	53,656	24,305
Baltimore & Ohio Chicago Term.	Nov. 90	.....	288,019	288,019	34,008	46,796	1,687	98.97	2,525	28,644	53,656	24,305
Staten Island Rapid Transit.....	Nov. 23	116,348	91,038	207,386	60,597	26,939	2,212	103.69	9,358	12,402	29,879	11,748
Staten Island Rapid Transit.....	Nov. 23	116,348	91,038	207,386	60,597	26,939	2,212	103.69	9,358	12,402	29,879	11,748
Staten Island Rapid Transit.....	Nov. 23	116,348	91,038	207,386	60,597	26,939	2,212	103.69	9,358	12,402	29,879	11,748
Bangor & Aroostook.....	Nov. 658	551,955	112,301	664,256	94,899	137,900	3,336	73.93	180,849	154,285	102,868	130,407
Bangor & Aroostook.....	Nov. 658	551,955	112,301	664,256	94,899	137,900	3,336	73.93	180,849	154,285	102,868	130,407
Bangor & Aroostook.....	Nov. 658	551,955	112,301	664,256	94,899	137,900	3,336	73.93	180,849	154,285	102,868	130,407
Belt Ry. Co. of Chicago.....	Nov. 31	.....	4,245,168	4,245,168	604,266	770,056	8,891	96.53	147,304	108,305	1,503,317	32,671
Belt Ry. Co. of Chicago.....	Nov. 31	.....	4,245,168	4,245,168	604,266	770,056	8,891	96.53	147,304	108,305	1,503,317	32,671
Belt Ry. Co. of Chicago.....	Nov. 31	.....	4,245,168	4,245,168	604,266	770,056	8,891	96.53	147,304	108,305	1,503,317	32,671
Bessemer & Lake Erie.....	Nov. 225	1,786,300	49,235	1,835,535	209,038	415,331	16,820	65.01	623,851	608,034	766,078	784,111
Bessemer & Lake Erie.....	Nov. 225	1,786,300	49,235	1,835,535	209,038	415,331	16,820	65.01	623,851	608,034	766,078	784,111
Bessemer & Lake Erie.....	Nov. 225	1,786,300	49,235	1,835,535	209,038	415,331	16,820	65.01	623,851	608,034	766,078	784,111
Bingham & Garfield.....	Nov. 36	29,755	1,514	31,269	22,302	7,945	2,884	136.65	19,533	24,363	9,026	37,756
Bingham & Garfield.....	Nov. 36	29,755	1,514	31,269	22,302	7,945	2,884	136.65	19,533	24,363	9,026	37,756
Bingham & Garfield.....	Nov. 36	29,755	1,514	31,269	22,302	7,945	2,884	136.65	19,533	24,363	9,026	37,756
Birmingham Southern.....	Nov. 28	48,467	66,808	115,275	5,356	13,464	829	92.04	8,397	5,911	786	9,821
Birmingham Southern.....	Nov. 28	48,467	66,808	115,275	5,356	13,464	829	92.04	8,397	5,911	786	9,821
Birmingham Southern.....	Nov. 28	48,467	66,808	115,275	5,356	13,464	829	92.04	8,397	5,911	786	9,821
Boston & Maine.....	Nov. 2,304	5,070,730	2,075,116	7,145,846	1,498,691	2,208,700	75,681	110.72	829,280	1,046,088	1,299,431	1,571,222
Boston & Maine.....	Nov. 2,304	5,070,730	2,075,116	7,145,846	1,498,691	2,208,700	75,681	110.72	829,280	1,046,088	1,299,431	1,571,222
Boston & Maine.....	Nov. 2,304	5,070,730	2,075,116	7,145,846	1,498,691	2,208,700	75,681	110.72	829,280	1,046,088	1,299,431	1,571,222
Brooklyn Eastern District Terminal.....	Nov. 9	107,523	.....	107,523	.....	.....	.....	92.04	46,807	26,732	32,241	67,925
Brooklyn Eastern District Terminal.....	Nov. 9	107,523	.....	107,523	.....	.....	.....	92.04	46,807	26,732	32,241	67,925
Brooklyn Eastern District Terminal.....	Nov. 9	107,523	.....	107,523	.....	.....	.....	92.04	46,807	26,732	32,241	67,925
Buffalo & Susquehanna R. R. Corp.....	Nov. 271	283,777	7,865	291,642	37,188	138,559	2,888	94.30	16,822	8,497	59,241	170,236
Buffalo & Susquehanna R. R. Corp.....	Nov. 271	283,777	7,865	291,642	37,188	138,559	2,888	94.30	16,822	8,497	59,241	170,236
Buffalo & Susquehanna R. R. Corp.....	Nov. 271	283,777	7,865	291,642	37,188	138,559	2,888	94.30	16,822	8,497	59,241	170,236
Buffalo, Rochester & Pittsburgh.....	Nov. 589	1,924,085	177,850	2,101,935	270,868	428,872	19,542	73.92	30,979	24,735	24,730	53,071
Buffalo, Rochester & Pittsburgh.....	Nov. 589	1,924,085	177,850	2,101,935	270,868	428,872	19,542	73.92	30,979	24,735	24,730	53,071
Buffalo, Rochester & Pittsburgh.....	Nov. 589	1,924,085	177,850	2,101,935	270,868	428,872	19,542	73.92	30,979	24,735	24,730	53,071
Canadian Pacific Lines in Maine.....	Nov. 233	1,406,804	30,707	1,437,511	187,502	71,979	2,945	104.65	1,943,364	1,744,449	1,857,611	146,745
Canadian Pacific Lines in Maine.....	Nov. 233	1,406,804	30,707	1,437,511	187,502	71,979	2,945	104.65	1,943,364	1,744,449	1,857,611	146,745
Canadian Pacific Lines in Maine.....	Nov. 233	1,406,804	30,707	1,437,511	187,502							

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1920—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues—			Operating expenses—			General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Increase (or decrease) last year.
		Freight.	Passenger.	(inc. misc.)	Way and structures.	Traffic.	Trans- portation.							
Chicago, Milwaukee & St. Paul.....	Nov. 10,605	11,373,995	2,507,329	15,795,054	1,804,485	162,816	6,970,941	425,584	13,694,999	86.70	2,100,505	1,789,407	1,842,957	1,013,755
11 mos. 10,625	107,568,120	28,507,812	154,572,118	26,995,369	38,963,663	1,432,966	75,464,941	4,762,138	148,698,811	96.20	5,873,330	1,073,886	6,574,983	-11,030,390
Chicago, Peoria & St. Louis R. R.	Nov. 247	2,094,127	303,914	2,398,041	46,781	6,039	157,888	11,578	31,729	107.51	-21,779	-28,975	-19,885	69,863
11 mos. 247	20,941,127	3,715,114	2,563,278	462,845	857,055	50,870	1,363,995	285,734	2,863,222	111.70	-299,943	-376,154	-407,900	343,836
Chicago, Rock Island & Pacific.....	Nov. 7,662	7,955,783	2,715,114	11,461,100	1,971,997	164,980	5,326,882	138,734	10,100,278	88.15	1,360,822	893,619	721,807	659,478
11 mos. 7,640	82,648,563	31,163,539	124,081,386	23,404,386	31,022,327	1,537,098	56,370,218	2,266,115	88,657,460	93.33	8,280,767	3,333,084	1,055,012	-7,634,774
Chicago, Rock Island & Gulf.....	Nov. 461	4,367,861	1,229,998	6,065,273	98,249	112,302	2,750,940	166,056	5,100,026	84.09	965,248	801,482	801,409	193,826
Chic., St. Paul, Minn. & Omaha.....	Nov. 1,749	2,048,847	694,515	2,963,317	311,675	637,709	1,493,359	84,664	2,568,041	86.66	395,276	268,776	248,922	-91,524
11 mos. 1,749	19,205,905	7,575,732	29,246,289	4,623,013	5,766,178	339,840	13,826,540	886,549	25,585,560	87.73	3,387,709	2,145,640	2,142,108	-486,002
Chic., Terre Haute & Southeastern. Nov.	374	656,528	25,640	696,198	102,383	205,276	255,485	12,794	529,143	83.47	111,624	92,124	121,660	281,866
11 mos. 374	5,126,473	275,784	5,543,734	843,835	1,881,311	53,733	2,299,981	127,060	3,829,143	94.33	314,591	1,103,091	665,649	971,752
Cincinnati, Indianapolis & Western. Nov.	321	315,073	63,793	393,686	87,920	88,577	181,814	22,772	393,012	99.83	674	-46,255	-36,379	33,331
11 mos. 321	3,109,239	676,590	4,092,864	767,021	1,328,781	103,561	1,971,621	219,734	4,403,540	107.59	-310,676	-490,393	-526,968	-1,632
Colorado & Southern.....	Nov. 1,099	1,361,659	251,326	1,737,655	179,216	266,543	614,081	60,466	1,143,883	65.83	593,771	533,872	508,282	436,329
11 mos. 1,099	10,507,288	2,785,257	14,427,898	2,534,140	3,335,511	131,583	5,188,809	542,429	2,039,418	81.41	2,682,196	2,039,418	2,095,514	649,799
Ft. Worth & Denver City.....	Nov. 454	959,620	298,927	1,307,592	150,363	262,440	11,103	573,676	40,141	80.10	260,263	239,841	195,410	-89,683
11 mos. 454	7,489,565	3,741,692	11,850,512	1,887,948	2,649,248	87,689	5,300,181	391,935	10,389,105	87.67	1,461,406	1,215,278	833,146	-1,987,310
Trinity & Brazos Valley.....	Nov. 368	230,491	28,717	273,707	54,513	60,651	113,120	11,146	242,417	88.73	30,780	22,816	24,623	29,152
11 mos. 368	1,583,285	270,799	1,963,355	702,885	615,104	26,378	918,824	132,340	2,395,352	122.00	-431,997	-518,107	-571,043	43,732
Wichita Valley.....	Nov. 256	164,650	50,600	224,045	31,463	13,906	82,895	1,942	130,221	58.12	93,824	88,475	69,715	30,470
11 mos. 256	1,072,866	475,412	1,644,059	401,614	162,780	927	705,697	17,811	1,288,742	78.39	355,316	295,480	125,192	-93,571
Colorado & Wyoming.....	Nov. 43	35,814	1,181	118,196	13,392	218,600	198	32,441	4,195	76.70	2,455	4,366	1,859	24,286
11 mos. 43	363,791	11,062	956,085	170,199	20,435	3,098	486,286	461,699	924,353	96.68	31,732	-166,633	-190,801	163,920
Delaware & Hudson.....	Nov. 881	3,734,510	267,129	4,151,759	440,786	1,104,883	1,828,337	158,951	3,587,795	86.40	563,964	482,436	487,308	-494,902
11 mos. 881	34,287,845	3,443,659	39,886,418	4,542,574	11,303,750	340,659	19,240,081	1,674,923	37,394,694	93.75	2,491,723	1,602,584	1,386,169	-669,623
Delaware, Lackawanna & Western. Nov.	956	6,649,690	1,227,880	8,606,028	743,873	2,035,712	94,588	3,896,793	7,002,989	81.37	1,603,039	1,113,445	1,021,951	-67,535
11 mos. 955	52,590,949	12,487,990	73,446,493	9,413,527	17,160,246	929,704	36,399,541	1,714,956	66,544,570	90.60	6,901,922	2,418,313	2,441,776	-8,257,205
Denver & Rio Grande.....	Nov. 2,585	3,236,067	610,301	4,080,303	605,444	779,393	1,364,750	94,395	2,950,493	72.30	1,130,309	971,739	1,371,759	957,696
11 mos. 2,585	26,439,204	6,998,855	36,171,133	5,692,699	8,410,591	433,015	13,923,757	922,157	29,218,121	80.78	6,953,012	5,476,369	6,299,833	1,048,199
Denver & Salt Lake.....	Nov. 235	2,118,311	40,788	2,672,799	751,433	808,112	1,330,995	7,848	297,332	98.55	4,387	-614	-5,848	32,576
11 mos. 235	21,851,111	2,118,311	430,788	2,672,799	751,433	808,112	1,330,995	87,643	3,029,705	113.35	-356,905	-450,358	-520,742	24,759
Detroit & Mackinac.....	Nov. 376	156,779	37,924	208,709	43,182	62,387	120,718	7,600	237,010	113.36	-28,301	-37,690	-34,958	-69,893
11 mos. 376	1,376,594	400,306	1,932,058	363,003	520,467	30,841	973,308	84,784	1,671,137	102.02	-39,080	-168,882	-62,271	-28,417
Detroit, Toledo & Ironton.....	Nov. 454	440,278	14,505	481,013	212,014	143,149	8,891	27,286	64,052	133.06	-19,020	-108,632	-21,135	-9,341
11 mos. 454	4,250,305	172,938	4,711,939	1,706,548	1,144,450	75,497	2,475,697	234,257	5,633,452	119.56	-921,313	-1,022,292	-1,303,061	-714,876
Duluth & Iron Range.....	Nov. 298	738,438	30,816	829,546	116,900	141,934	322,382	21,135	605,022	72.93	224,524	179,406	188,596	216,060
11 mos. 298	9,814,319	269,237	10,084,591	1,360,442	1,886,611	12,615	2,866,157	215,325	5,849,121	53.69	5,045,471	4,479,501	4,612,568	1,415,954
Duluth, Missabe & Northern.....	Nov. 406	1,360,548	52,859	1,541,136	188,163	216,875	535,239	26,767	972,054	63.07	569,482	484,876	477,286	358,916
11 mos. 406	17,121,013	565,230	19,554,757	2,407,513	1,890,604	33,214	4,313,623	259,997	8,925,698	46.12	10,429,059	9,416,100	9,416,699	-2,262,096
Duluth, South Shore & Atlantic.....	Nov. 613	357,987	108,477	514,216	74,100	97,427	305,666	12,251	505,985	98.40	8,231	-16,769	-42,449	-32,505
11 mos. 613	3,611,542	1,215,177	5,365,114	1,081,830	948,964	58,501	2,700,016	130,093	4,996,003	93.12	369,111	102,851	121,774	-195,688
Elgin, Joliet & Eastern.....	Nov. 837	2,462,024	2,699,491	247,436	447,906	13,094	885,599	40,962	1,613,838	60.52	1,065,652	1,014,052	806,239	960,950
11 mos. 834	20,360,421	111	22,978,940	2,459,054	5,077,252	98,776	9,082,862	419,030	17,126,504	74.53	5,852,436	5,283,221	3,114,714	446,695
El Paso & Southwestern.....	Nov. 1,027	953,809	243,408	1,270,775	301,362	216,509	340,834	51,475	947,286	74.54	323,488	170,337	182,765	-106,486
11 mos. 1,027	9,949,612	2,386,977	13,220,652	2,878,412	2,600,574	212,647	3,693,456	483,571	9,971,434	75.42	3,249,228	2,171,576	2,209,435	-379,484
Erie R. R.	Nov. 1,989	9,375,545	1,238,929	11,284,194	912,691	3,117,240	6,231,911	339,617	10,786,087	95.59	498,107	149,962	160,856	-23,033
11 mos. 1,989	76,727,166	13,098,423	98,948,755	14,238,721	33,321,027	1,171,906	53,987,951	3,047,945	106,531,037	107.66	-7,582,281	-10,534,314	-9,615,176	-10,074,350
Chicago & Erie.....	Nov. 269	1,091,970	88,798	1,230,345	135,679	170,581	682,083	47,025	1,057,979	85.99	172,366	100,754	-244,384	-148,438
11 mos. 269	9,897,254	885,517	11,721,299	1,445,597	1,979,119	180,714	6,137,723	398,254	10,166,343	86.73	1,554,956	1,085,147	2,258,781	-2,603,534
New Jersey & New York.....	Nov. 47	20,903	97,840	124,273	7,892	12,897	64,690	3,251	89,776	72.24	34,497	30,099	3,688	80,632
11 mos. 47	170,638	978,948	1,226,608	132,105	198,095	17,532	749,240	29,626	1,126,391	91.85	100,017	72,044	-177,520	-5,171
N. Y. Susquehanna & Western.....	Nov. 135	305,477	66,990	419,529	124,155	64,893	3,044	487,938	116.31	-68,403	-109,842	-90		

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1920—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Increase (or decrease) comp. with last year.
		Freight.	Passenger.	Total (inc. misc.).	Way and structures.	Equip-ment.	Traffic, portation.					
Critic, Det. & Canada Gr. Tr. Jct. Nov.	62	185,581	19,779	205,360	14,252	28,821	96,836	62.40	89,951	85,255	62,718	19,959
Det. & Milwaukee, Nov.	62	1,311,445	202,389	1,513,834	196,577	301,387	1,792,970	82.25	306,096	256,563	21,876	731,182
Det. & Milwaukee, Nov.	195	478,041	52,707	530,748	70,704	109,970	408,074	82.25	145,635	142,547	97,365	117,610
11 mos.	195	3,514,112	577,540	4,091,652	802,267	901,339	2,748,575	102.17	1,000,330	1,360,473	795,407	1,475,743
Great Northern Nov.	8,170	9,616,478	1,761,259	11,377,737	1,333,884	2,429,973	11,547,500	77.87	2,723,581	2,012,463	2,050,802	1,990,686
11 mos.	8,170	81,817,376	18,868,989	100,686,365	13,886,993	24,300,130	108,076,332	89.08	12,491,341	5,333,340	5,753,827	7,549,894
Gulf Coast Lines Nov.	924	1,053,153	281,288	1,334,441	246,199	200,226	320,018	66.11	471,915	433,344	323,607	379,746
11 mos.	924	8,482,805	2,996,838	11,479,643	2,822,677	2,098,114	23,850,461	79.69	2,436,737	2,130,617	1,384,344	1,727,283
Gulf & Ship Island Nov.	307	216,276	46,737	263,013	66,337	50,049	117,416	90.29	26,930	19,875	13,744	11,021
11 mos.	307	2,094,145	565,999	2,660,144	796,017	662,590	1,862,527	102.38	66,865	313,785	224,560	145,886
Gulf, Mobile & Northern Nov.	470	379,640	56,022	435,662	97,784	95,259	206,912	94.68	24,162	11,327	18,940	1,919
11 mos.	470	2,851,032	645,343	3,496,375	1,328,444	971,725	1,869,201	117.39	649,291	799,431	880,610	801,751
Illinois Central Nov.	4,799	10,248,933	2,236,423	12,485,356	1,732,207	3,024,139	13,140,487	85.48	1,933,179	1,212,169	1,533,552	2,004,499
11 mos.	4,799	96,494,523	24,474,962	120,969,485	17,300,726	34,337,160	119,827,099	92.80	9,503,162	2,442,382	5,970,713	17,182,264
Yazoo & Mississippi Valley Nov.	1,382	1,629,420	465,801	2,095,221	371,366	376,662	1,247,193	84.91	323,964	261,014	323,580	86,886
11 mos.	1,381	19,157,315	5,382,082	24,539,397	5,941,186	5,960,149	25,358,799	91.62	2,183,028	1,224,914	400,476	4,836,673
Illinois Terminal Nov.	2,444	113,279	.....	113,279	7,595	11,086	773	41.67	68,184	67,067	50,079	16,662
11 mos.	2,444	957,230	.....	957,230	64,483	113,066	21,422	48.42	517,991	505,532	457,432	15,819
International & Great Northern Nov.	1,159	1,620,419	394,404	2,014,823	318,700	356,247	1,696,083	82.36	379,999	341,526	238,120	134,789
11 mos.	1,159	12,941,069	3,476,149	17,117,218	3,493,788	4,237,393	10,619,430	98.80	214,250	125,750	908,673	233,649
Kansas City, Mexico & Orient Nov.	272	151,579	10,878	162,457	49,980	40,729	77,682	94.00	10,362	2,662	10,175	318
11 mos.	272	1,245,173	201,440	1,446,613	541,367	540,375	1,307,642	138.92	603,697	688,371	684,360	203,940
Kan. City, Mex. & Orient of Tex. Nov.	465	161,372	16,947	178,319	26,175	33,331	43,297	87.34	23,541	17,291	20,085	54,785
11 mos.	465	1,376,025	255,255	1,631,280	178,136	485,959	1,053,124	135.19	613,807	683,729	679,098	41,489
Kansas City Southern Nov.	779	1,394,062	231,065	1,625,127	240,150	323,537	786,849	83.05	298,541	224,000	176,573	65,841
11 mos.	779	13,823,170	2,719,671	16,542,841	2,508,384	3,674,555	13,760,002	82.36	3,167,314	2,401,009	1,952,213	361,662
Texasarkana & Ft. Smith Nov.	93	215,291	19,019	234,310	22,343	26,380	77,936	55.49	113,405	104,325	78,905	17,174
11 mos.	93	1,600,736	251,703	1,852,439	244,350	218,300	683,992	62.47	756,061	642,979	439,208	156,411
Kansas City Terminal* Nov.	27	.....	.....	.....	139,815	19,172	64,943	81.01	26,546	7,522	179,101	9,334
11 mos.	27	.....	.....	.....	1,467,008	264,140	26,671	31,880	27,865	329,677	1,957,755	224,654
Lake Superior & Ishpeming Nov.	34	112,097	263	112,360	126,718	19,945	42,114	65.92	45,563	58,631	41,723	26,846
11 mos.	34	1,459,179	2,502	1,461,681	2,343,315	204,911	401,990	52.77	777,803	224,033	742,239	417,337
Lake Terminal R. R. Nov.	12	.....	.....	.....	10,413	37,734	.....	107.89	17,795	23,645	42,099	25,883
11 mos.	12	.....	.....	.....	138,275	10,413	.....	74	156,070	118,87	198,037	145,078
Lehigh & Hudson River Nov.	96	326,236	5,476	331,712	41,502	54,842	931,551	78.22	261,487	79,157	36,940	42,082
11 mos.	96	2,652,734	46,178	2,698,912	358,692	543,421	2,069,901	89.61	291,097	196,117	85,626	387,725
Lehigh & New England Nov.	239	476,366	1,794	478,160	76,428	95,761	3,593	165.08	16,892	357,665	121,833	27,215
11 mos.	239	4,163,531	21,724	4,185,255	754,278	912,116	59,187	83.03	788,232	630,035	830,395	11,361
Lehigh Valley Nov.	1,436	6,446,031	676,871	7,122,902	691,113	2,125,108	95,282	105.47	3,709,434	5,597,149	5,597,149	9,090,031
11 mos.	1,436	55,560,582	7,133,746	62,694,328	11,048,463	20,516,934	804,127	103.47	3,709,434	5,597,149	5,597,149	9,090,031
Louisiana & Arkansas Nov.	302	383,616	42,330	425,946	97,134	57,134	165,030	76.83	101,071	86,853	66,254	51,344
11 mos.	302	3,207,517	542,056	3,749,573	894,920	565,607	5,415	76.62	911,449	725,880	639,138	843,841
Louisiana Ry. & Nav. Co. Nov.	313	344,644	40,129	384,773	90,471	76,404	1,202,34	93.82	4,846	1,154	47,904	32,964
11 mos.	313	3,066,601	472,184	3,538,785	942,968	648,395	1,804,639	91.89	317,116	159,594	83,321	20,516
Louisville & Nashville Nov.	5,040	8,606,717	2,232,245	10,838,962	1,866,272	2,938,825	193,092	92.19	896,686	593,864	904,166	430,735
11 mos.	5,040	82,681,924	24,242,295	106,924,219	20,959,110	31,495,122	1,890,901	96.44	4,102,652	827,188	2,898,001	6,793,912
Louisville, Henderson & St. Louis Nov.	199	201,682	68,276	270,000	68,681	36,033	125,394	87.75	34,162	26,947	10,242	12,613
11 mos.	199	1,965,024	709,512	2,674,536	712,693	405,385	1,087,506	83.22	512,173	460,255	337,394	115,416
Maine Central Nov.	1,216	1,638,754	452,489	2,091,243	366,691	408,195	15,677	86.77	293,749	197,638	188,001	258,447
11 mos.	1,216	12,967,871	4,963,488	17,931,359	3,664,038	4,476,478	154,942	104.05	787,874	1,823,103	1,996,248	784,895
Midland Valley Nov.	388	390,188	112,312	502,500	105,416	63,176	169,244	68.31	166,281	159,058	158,937	169,131
11 mos.	388	3,232,223	1,150,829	4,383,052	1,111,782	793,292	1,694,543	83.01	779,184	699,693	665,199	294,821
Mineral Range R. R. Co. Nov.	101	53,810	479	54,289	9,415	21,309	48,178	140.40	33,237	27,537	18,583	23,974
11 mos.	101	505,229	3,467	508,696	170,395	228,161	378,989	127.44	170,126	213,549	131,743	64,290
Minneapolis & St. Louis Nov.	1,646	1,780,802	219,618	1,999,420	247,833	385,197	1,497,181	95.79	65,740	15,305	19,840	64,041
11 mos.	1,646	11,995,725	1,436,273	13,432,000	3,961,613	5,449,193	15,843,633	102.64	407,361	1,073,705	1,098,570	1,110,526
Minneapolis, St. P. & S. S. Marie, Nov.	4,243	3,841,138	780,844	4,621,982	689,764	1,067,547	42,274	86.90	648,191	371,828	410,583	131,747
11 mos.	4,243	31,991,719	8,345,105	40,336,824	8,316,414	9,101,647	461,858	89.43	4,681,887	1,561,154	1,603,774	312,703
Mississippi Central Nov.	164	63,800	22,734	86,534	16,639	36,659	48,298	123.00	20,859	25,969	17,270	32,630
11 mos.	164	672,124	251,572	923,696	380,619	370,342	267,555	136.80	366,070	416,513	320,621	157,980
Missouri & North Arkansas Nov.	364	116,917	59,153	176,070	55,174	36,307	91,968	97.15	5,952	1,388	4,749	76,621
11 mos.	364	1,179,706	552,125	1,731,831	656,862	405,535	38,259	107.86	150,143	201,940	265,148	347,775
Missouri, Kansas & Texas Nov.	1,715	2,516,161	755,799	3,271,960	500,427	942,233	451,446	84.21	558,153	472,382	652,653	511,662
11 mos.	1,715	25,221,568	8,127,713	33,349,281	6,795,904	9,967,133	434,638	87.14	4,693,755	3,412,599	5,155,146	1,042,131
Miss., Kansas & Texas of Texas Nov.	1,739	2,108,030	833,475	2,941,505	441,728	474,467	43,653	76.60	784,436	695,893	335,540	804,478
11 mos.	1,739	16,017,805	8,613,204	24,631,009	6,841,279	5,228,317	382,937	101.89	493,698	1,084,553	4,316,980	3,040,280
Wichita Falls & Northwestern Nov.	328	147,773	47,121	194,894	55,883	41,721	7,881	90.87	19,207	1,162	6,264	48,402
11 mos.	328	1,698,874	555,711	2,254,585	684,084	368,291	11,486	99.44	13,406	107,500	389,901	123,561
Missouri, Oklahoma & Gulf Nov.	329	281,964	25,822	307,786	65,864	66,434	137,565	90.89	29,164	21,155	8,459	188,392
11 mos.	329	2,090,515	278,602	2,369,117	591,577	642,814	29,756	104.91	122,060	231,826	324,531	599,643

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1920--CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Maintenance of way and structures.		Operating expenses			Net from railway operation, (or loss).	Net after rentals.	Increase (or decr.) last year.
		Freight.	Passenger.	Total (inc. misc.)	Way and structures.	Equip-ment.	Traffic.	Trans- portation.	General.				Total.
Missouri Pacific	7,300	9,207,489	1,834,325	11,777,259	1,654,645	2,383,102	167,530	4,671,680	284,311	9,202,368	2,220,395	1,852,836
Nov. 11 mos.	7,299	78,001,957	19,976,005	107,437,742	23,123,412	26,744,919	1,647,405	46,739,422	2,948,997	101,725,361	2,445,331	7,168,839
Monongahela Connecting	Nov. 7	.....	.....	201,033	31,616	39,634	562	114,858	6,948	123,018	5,226	5,299
Nov. 11 mos.	7	.....	.....	2,804,650	321,355	3,424,355	6,203	1,402,952	72,741	2,935,011	430,097	359,032
Montour	Nov. 56	197,815	1,085	205,490	39,351	60,914	1,062	49,898	7,477	158,765	44,116	76,015
Nov. 11 mos.	56	1,456,101	13,400	1,469,501	608,558	12,406	451,931	80,745	1,539,102	32,337	551,263	201,284
Nashville, Chattanooga & St. Louis	Nov. 1,247	15,578,935	458,170	2,064,144	368,064	367,216	70,764	1,041,959	64,759	2,118,942	102,63	54,348
Nov. 11 mos.	1,247	15,534,706	5,073,509	22,479,740	4,673,322	6,093,708	644,146	10,354,694	627,454	22,465,033	111,869	4,585
Nevada Northern	Nov. 165	64,982	10,185	81,219	20,530	11,611	655	25,319	4,192	62,438	18,701	10,530
Nov. 11 mos.	165	1,329,173	114,125	1,511,697	310,704	248,081	9,215	40,555	52,061	1,022,441	37,611	357,377
Newburgh & South Shore	Nov. 7	.....	.....	21,656	23,255	41,667	.....	40,388	4,222	172,138	14,128	38,376
Nov. 11 mos.	7	.....	.....	1,685,817	190,147	374,883	.....	1,043,331	48,646	1,657,007	69,705	64,322
New Orleans Great Northern	Nov. 284	190,349	43,991	244,723	54,326	6,274	107,373	11,998	224,454	11,935	20,268	8,085
Nov. 11 mos.	284	1,802,189	565,297	2,478,004	573,716	549,800	51,914	1,069,031	116,359	2,365,984	112,020	88,282
New York Central	Nov. 6,069	24,276,316	7,489,467	35,103,674	4,678,734	8,456,927	274,378	15,881,543	722,225	30,025,317	3,879,034	3,568,609
Nov. 11 mos.	6,069	203,978,146	88,248,964	337,349,022	49,364,661	90,441,361	3,236,428	161,884,220	8,575,415	318,668,692	94,146	18,680,331
Cincinnati Northern	Nov. 245	273,127	18,272	299,269	62,791	66,768	4,988	106,914	7,873	249,312	83,31	49,957
Nov. 11 mos.	245	2,884,906	222,436	3,443,719	613,465	704,793	43,555	1,239,408	162,344	2,678,356	93,10	670,360
Cleve., Cin., Chic. & St. Louis	Nov. 2,409	5,980,905	1,569,274	8,062,170	1,105,388	1,666,694	105,609	3,551,283	763,343	6,750,921	80,72	1,312,149
Nov. 11 mos.	2,408	55,749,417	17,968,228	81,502,956	11,015,533	18,918,944	1,117,259	34,376,740	1,635,277	67,901,190	83,31	13,601,766
Indiana Harbor Belt	Nov. 120	.....	.....	965,287	118,861	286,391	5,619	571,310	23,640	1,005,695	104,19	40,408
Nov. 11 mos.	120	.....	.....	8,445,946	1,254,279	2,845,997	33,391	5,913,283	246,604	10,323,509	122,23	1,877,563
Kanawha & Michigan	Nov. 176	545,131	61,942	626,613	96,310	169,286	6,019	199,177	15,095	485,900	77,54	140,713
Nov. 11 mos.	176	4,143,015	611,986	4,951,729	965,891	1,796,386	40,952	1,895,600	155,94	4,854,768	98,04	96,961
Lake Erie & Western	Nov. 738	968,542	62,047	1,083,822	143,191	343,807	19,572	408,223	29,027	943,194	87,02	140,628
Nov. 11 mos.	738	9,352,165	740,203	10,696,679	1,444,588	3,613,150	177,196	4,683,476	303,388	10,214,142	95,49	482,538
Michigan Central	Nov. 1,862	5,198,408	1,884,948	7,732,922	1,166,804	2,054,171	126,873	3,087,422	155,275	6,678,945	86,37	1,053,977
Nov. 11 mos.	1,862	51,365,165	20,701,870	80,424,149	11,453,326	21,150,881	927,664	34,400,161	1,556,367	70,659,400	87,86	9,764,749
Pittsburgh & Lake Erie	Nov. 224	3,718,156	305,128	4,391,259	547,665	1,027,118	21,075	1,329,106	71,026	2,998,056	50,37	1,393,203
Nov. 11 mos.	224	26,185,272	3,013,083	32,022,095	5,870,136	11,399,064	222,547	11,934,675	702,027	30,151,398	94,16	1,870,697
Rutland R. R.	Nov. 415	304,654	143,199	547,199	104,212	144,102	8,872	290,187	17,387	566,74	103,58	19,575
Nov. 11 mos.	415	2,967,118	1,481,356	5,432,020	1,059,304	1,506,522	67,718	2,725,598	162,605	5,543,390	102,05	111,376
Toledo & Ohio Central	Nov. 503	1,356,071	81,719	1,501,684	175,539	321,634	11,637	528,516	26,794	1,067,634	71,10	434,050
Nov. 11 mos.	491	10,645,851	792,041	12,099,176	1,749,270	3,425,474	115,278	5,349,557	259,801	10,937,413	90,44	1,155,763
New York, Chicago & St. Louis	Nov. 575	2,529,307	114,173	2,715,781	284,644	577,503	51,392	1,091,350	76,175	2,086,768	70,84	629,012
Nov. 11 mos.	574	23,602,969	1,198,404	25,695,030	3,024,814	4,728,115	511,022	10,906,028	780,884	20,014,286	77,39	5,680,750
N. Y., New Haven & Hartford	Nov. 2,904	5,671,656	1,155,529	1,872,749	2,956,590	65,399	5,704,865	346,606	11,140,489	99,41	414,739	20,042
Nov. 11 mos.	1,984	52,123,041	47,922,432	114,662,960	19,128,075	27,672,608	635,337	60,778,432	3,909,565	114,246,418	96,64	416,427
Central New England	Nov. 301	801,288	26,618	853,905	137,011	131,592	3,864	366,146	15,313	653,690	76,55	200,214
Nov. 11 mos.	301	6,287,955	290,957	6,879,089	1,780,116	1,574,474	41,423	4,033,775	183,920	7,622,526	110,81	743,438
New York, Ontario & Western	Nov. 569	897,594	145,336	1,195,602	144,070	311,975	15,613	536,128	27,373	1,035,158	86,58	160,444
Nov. 11 mos.	569	7,062,402	2,947,512	11,784,991	2,093,464	3,074,106	931,179	5,324,527	304,774	11,337,521	96,20	447,873
Norfolk & Western	Nov. 2,108	8,872,183	906,151	11,088,043	940,850	2,457,804	62,646	3,991,419	172,187	7,664,698	88,387	1,073,739
Nov. 11 mos.	2,200	64,877,980	9,306,995	78,107,975	11,855,699	26,818,387	675,020	35,043,763	1,128,851	76,337,928	97,72	1,780,047
Norfolk Southern	Nov. 944	443,922	150,983	635,077	50,531	80,978	18,609	348,253	32,677	531,321	83,66	103,756
Nov. 11 mos.	926	4,806,139	1,853,989	7,179,434	1,549,943	2,179,434	159,493	3,399,495	7,375,340	99,123	195,266	422,075
Northern Pacific	Nov. 6,655	8,070,039	1,310,855	10,352,569	1,260,478	2,286,353	12,537	4,434,216	289,134	8,466,062	81,78	1,896,507
Nov. 11 mos.	6,653	72,741,958	19,461,165	102,002,059	19,867,550	20,983,428	1,003,970	41,776,891	2,724,166	87,736,493	86,01	14,265,565
Minnesota & International	Nov. 194	66,690	42,459	118,091	13,782	25,182	615	52,431	3,980	95,989	81,28	22,102
Nov. 11 mos.	194	740,357	348,875	1,178,467	294,840	230,360	6,503	591,293	43,971	1,166,965	99,02	11,503
Pennsylvania R. R.	Nov. 7,259	42,469,546	11,420,361	58,108,817	6,462,550	15,086,917	436,130	26,763,959	1,438,427	51,088,784	87,92	7,020,033
Nov. 11 mos.	7,259	347,416,902	121,857,027	514,264,691	84,984,262	161,877,931	4,542,123	265,889,739	13,269,146	539,724,445	104,95	25,459,758
Baltimore, Chesapeake & Atlantic	Nov. 87	168,138	40,793	152,724	18,535	22,432	1,622	124,274	5,185	172,049	112,65	20,325
Nov. 11 mos.	87	1,373,187	480,321	1,511,471	160,590	463,354	14,994	979,394	47,082	1,665,413	108,04	123,944
Long Island	Nov. 398	783,694	1,106,406	2,103,708	318,879	498,140	19,461	1,326,527	68,226	2,250,017	116,95	156,309
Nov. 11 mos.	398	6,630,999	14,852,331	23,908,913	3,546,234	5,005,347	202,455	13,454,503	665,603	23,038,726	96,44	850,187
Maryland, Delaware & Virginia	Nov. 82	81,811	30,056	115,129	18,469	10,705	979	91,142	2,843	124,139	107,83	9,010
Nov. 11 mos.	82	752,021	426,379	1,230,978	127,133	385,487	10,413	861,905	30,367	1,415,392	114,97	184,327
Monongahela Ry.	Nov. 106	376,668	36,236	407,534	107,534	58,681	1,575	156,966	33,196	376,668	64,12	186,457
Nov. 11 mos.	106	3,572,822	316,763	3,980,052	647,044	1,180,317	11,803	1,409,117	88,740	479,426	86,34	543,700

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1920—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Increase (or decr.) comp. with last year.
		Freight.	Passenger.	Total (inc. misc.).	Way and structures.	Maintenance of equip-ment.	Traffic.	Trans- portation.					
New York, Phila. & Norfolk.....	121	577,804	732,937	1,310,741	66,300	184,947	8,170	376,209	92.41	55,614	28,033	17,617	10,449
Nov.	121	5,637,079	1,172,972	7,420,866	770,452	2,084,498	106,739	4,376,998	103.80	281,965	61,721	75,864	1,499,904
West Jersey & Seashore.....	31	545,000	1,030,362	1,575,362	176,816	378,816	12,993	587,724	101.12	1,770	50,936	61,721	1,499,904
Nov.	31	4,219,156	7,890,047	13,060,447	2,874,479	7,279,301	125,019	6,750,748	99.25	97,253	421,107	784,392	1,027,481
Peoria & Pekin Union.....	19	32,638	3,758	36,396	39,491	37,081	40	103,652	94.25	11,395	1,895	21,200	75,705
Nov.	19	305,754	45,745	351,500	240,170	412,341	3,111	1,025,187	116.01	240,034	344,533	331,708	107,448
Pere Marquette	2,238	3,013,222	477,228	3,490,450	373,241	824,230	57,672	1,720,789	81.19	702,905	604,508	478,954	6,565
Nov.	2,233	27,596,742	6,380,446	33,977,188	5,130,780	8,448,986	476,789	17,480,669	88.00	4,514,265	3,741,849	1,542,949	6,054,085
Phila., Bethlehem & New Eng.....	10	.....	.....	.....	.....	.....	405	76,404	104.04	1,395	6,406	8,412	3,195
Nov.	10	.....	.....	.....	.....	.....	4,866	862,991	101.01	12,315	27,379	64,534	60,854
Philadelphia & Reading.....	1,126	8,387,641	1,011,927	9,399,568	736,506	2,536,988	66,624	4,316,586	80.22	1,934,327	1,677,692	1,432,078	1,755,370
Nov.	1,126	69,556,178	10,243,223	79,799,401	10,119,673	23,359,889	634,862	42,590,251	93.37	5,614,140	3,469,592	496,953	2,322,050
Atlantic City	177	109,712	147,813	257,525	66,768	46,923	3,394	205,496	119.93	53,829	69,198	90,691	51,711
Nov.	177	1,247,634	2,907,449	4,423,417	708,393	523,146	31,847	2,505,340	85.58	637,898	473,479	200,529	597,412
Perkiomen	41	104,104	9,167	113,271	7,232	5,337	15	45,529	49.28	60,142	56,816	50,572	1,139
Nov.	41	966,864	1,406,629	2,373,493	105,697	52,528	211	460,303	54.37	522,571	496,382	436,554	30,808
Port Reading	21	77,177	.....	77,177	12,453	7,307	18	92,260	82.31	24,167	12,867	14,530	121,528
Nov.	21	1,270,043	.....	1,270,043	191,364	112,661	206	973,173	76.85	388,477	292,380	300,876	121,528
Pittsburg & Shawmut.....	103	183,317	6,128	189,445	28,973	46,675	1,530	61,718	76.46	45,018	44,824	81,349	101,242
Nov.	103	1,559,897	57,924	1,617,821	334,057	404,794	15,676	598,092	87.56	203,299	194,613	596,460	787,458
Pittsburgh & West Virginia.....	63	230,878	13,253	244,131	79,665	47,393	1,343	98,747	88.40	32,756	19,429	17,679	40,854
Nov.	63	1,919,805	115,068	2,034,873	755,018	568,423	18,402	858,621	105.84	133,775	287,989	231,915	360,375
Pittsburgh, Shawmut & Northern.....	209	141,428	7,555	148,983	45,708	65,064	2,082	70,170	129.27	14,158	46,065	15,395	2,032
Nov.	209	1,333,538	72,454	1,405,992	366,938	637,618	19,388	10,007	127.05	388,359	409,762	50,313	56,747
Quincy, Omaha & Kansas City.....	255	87,956	29,611	117,567	30,968	17,979	999	68,307	95.56	5,627	1,439	8,364	8,364
Nov.	255	824,418	287,902	1,112,320	299,656	299,656	6,783	714,110	123.15	287,286	331,815	384,009	210,446
Richm'd, Fredericksburg & Potomac.....	117	377,078	320,707	697,785	122,927	144,850	6,999	389,973	86.99	105,706	74,375	55,088	1,937
Nov.	117	4,785,272	3,478,107	8,263,379	1,093,697	1,682,372	81,076	4,371,093	75.20	2,483,072	2,152,632	1,823,918	2,581,809
St. Louis-San Francisco.....	4,757	6,108,440	1,908,507	8,016,947	1,613,612	79,969	3,416,308	259,520	76.83	1,974,153	1,715,340	1,570,806	375,234
Nov.	4,757	57,572,169	22,940,700	80,512,869	14,877,840	19,543,943	35,330,426	2,600,909	85.33	12,532,437	9,768,353	8,442,209	5,215,231
Ft. Worth & Rio Grande.....	235	118,319	65,687	183,906	120,334	40,293	3,135	109,536	142.23	82,698	86,709	100,830	122,137
Nov.	235	945,097	720,233	1,665,330	356,419	256,419	25,480	1,034,937	139.18	705,080	747,682	979,694	1,012,449
St. Louis, San Francisco & Tex.....	134	156,949	22,884	179,833	73,431	37,551	3,090	116,212	123.51	45,133	47,017	83,135	77,301
Nov.	134	1,325,780	217,530	1,543,310	565,880	349,851	24,667	1,047,294	126.05	426,179	451,036	814,627	668,377
St. Louis Southwestern.....	968	1,714,100	195,921	1,909,021	285,835	352,323	49,800	460,441	61.65	760,357	619,839	619,839	196,222
Nov.	963	16,409,667	2,140,101	18,549,768	2,906,739	3,287,217	481,136	5,161,683	64.14	6,985,185	6,238,634	6,418,878	3,802,649
St. Louis Southwestern of Texas.....	807	630,634	146,484	777,118	265,284	263,980	22,070	392,995	116.79	140,418	153,448	122,132	36,778
Nov.	807	6,157,802	1,560,787	7,718,589	2,813,160	2,670,359	194,258	4,454,321	124.36	2,053,016	2,295,012	1,852,998	526,417
San Antonio & Aransas Pass.....	736	472,218	119,869	592,087	124,441	129,709	8,897	285,276	91.76	51,583	42,881	29,492	164,845
Nov.	736	3,752,257	1,301,326	5,053,583	1,199,487	1,215,556	87,781	2,663,888	98.52	81,275	66,431	11,093	1,004,276
Seaboard Air Line.....	3,563	2,916,956	964,770	3,881,726	433,277	695,234	110,206	2,028,225	80.61	829,446	708,936	627,783	769,798
Nov.	3,563	29,653,733	9,756,761	39,410,494	7,790,679	10,809,921	1,152,588	22,322,113	100.47	208,623	1,775,996	3,353,937	5,386,658
South Buffalo Ry. Co.....	11	94,197	.....	94,197	6,185	2,382	361	105,768	80.06	34,223	30,472	17,154	36,319
Nov.	11	730,901	.....	730,901	73,500	187,010	5,298	996,230	88.43	168,061	124,811	35,160	48,628
Southern Ry.	6,971	8,704,944	2,991,078	11,696,022	2,279,950	2,630,459	200,893	6,157,659	92.61	936,920	522,311	368,037	597,945
Nov.	6,973	91,630,378	33,745,842	125,376,220	19,713,891	26,900,322	1,932,567	63,487,490	84.11	22,130,431	17,518,630	14,602,712	5,689,598
Alabama Great Southern.....	313	794,934	203,787	998,721	150,562	252,014	24,510	523,148	92.75	76,938	12,842	30,225	202,977
Nov.	313	7,522,947	2,270,454	9,793,401	1,273,797	2,297,669	209,924	4,128,730	79.04	2,281,455	1,823,548	1,987,228	689,704
Cin., New Orleans & Tex. Pacific.....	338	1,397,819	401,337	1,799,156	250,642	553,150	32,736	745,075	88.89	268,901	78,302	143,248	260,999
Nov.	338	13,909,391	3,893,116	17,802,507	4,916,960	9,916,960	295,799	6,985,178	78.17	4,172,881	3,245,400	3,921,480	3,288,797
Georgia Southern & Florida.....	402	2,881,340	116,936	2,998,276	112,919	139,267	8,072	289,089	122.71	105,095	127,204	149,050	136,163
Nov.	402	28,864,340	4,627,831	33,492,171	843,296	1,204,345	86,558	2,609,341	100.50	43,954	262,571	268,292	303,280
Mobile & Ohio.....	1,165	1,531,950	186,311	1,718,261	247,366	538,994	37,913	799,096	92.30	139,761	87,471	118,917	208,640
Nov.	1,165	13,807,002	2,191,452	15,998,454	3,410,998	5,448,367	378,939	8,301,441	102.22	897,770	1,535,238	910,828	92,638
New Orleans & North Eastern.....	207	508,348	1,198,377	1,706,725	1,173,712	1,436,986	121,283	2,950,448	88.04	1,127,954	674,112	688,500	597,730
Nov.	207	5,119,358	1,198,377	6,317,735	1,173,712	1,436,986	121,283	2,950,448	88.04	1,127,954	674,112	688,500	597,730
Northern Alabama.....	110	113,418	132,542	245,960	29,112	6,770	1,848	60,624	76.88	30,640	25,465	7,410	35,860
Nov.	110	1,150,429	173,846	1,324,275	351,082	82,865	18,337	637,899	82.69	239,321	189,015	82,880	153,206
Southern Ry. in Mississippi.....	278	106,322	45,477	151,800	45,656	21,053	6,085	170,817	104.10	6,732	15,732	47,845	63,306
Nov.	278	973,093	550,145	1,523,238	659,078	282,416	33,522	1,009,010	122.06	371,185	477,402	734,675	640,740
Southern Pacific.....	7,118	11,926,227	4,804,742	16,730,969	2,341,155	3,728,652	197,642	7,088,233	72.31	4,079,171	3,161,323	2,906,766	1,355,171
Nov.	7,100	115,736,882	49,980,082	165,716,964	27,976,218	37,278,652	1,981,952	73,563,915	80.89	35,304,263	25,016,201	23,986,638	6,456,315

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF NOVEMBER AND ELEVEN MONTHS OF CALENDAR YEAR 1920—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net rentals.	Increase (or decrease) after comp. with last year.
		Freight.	Passenger.	Total (inc. misc.).	Maintenance of way and structures.	Equip. ment.	Traffic.	Trans- portation.					
Arizona Eastern.....	Nov. 383	318,803	62,323	425,618	63,258	49,913	4,085	123,364	23,540	133,950	124,543	107,558	98,251
.....	11 mos. 380	2,862,409	609,117	3,795,272	843,989	335,665	38,572	1,283,572	279,721	815,578	492,322	366,082	-158,030
Galveston, Harrisburg & S. Antonio, Nov. 1,381	1,381	2,107,120	27,370	3,235,000	525,000	756,831	39,248	1,021,706	22,446,557	284,174	87,520	32,227	-563,184
.....	11 mos. 1,383	17,594,414	5,235,481	23,982,834	4,951,352	6,379,288	403,173	9,274,479	799,388	1,061,895	1,061,895	-232,285	3,748,020
Houston & Texas Central.....	Nov. 915	907,794	274,208	1,256,131	275,000	287,986	21,797	504,330	32,471	1,121,572	83,053	27,492	-281,059
.....	11 mos. 899	7,194,945	2,790,075	10,876,360	2,751,000	2,432,452	182,391	4,382,959	309,878	10,257,036	94,311	62,757	-205,599
Houston, East & West Texas.....	Nov. 190	211,447	57,069	282,422	97,500	53,768	3,508	159,055	7,686	321,516	46,960	-69,986	-110,303
.....	11 mos. 190	1,934,279	620,154	2,735,917	—	470,883	35,445	1,303,640	75,534	2,857,492	-219,148	-353,260	-677,323
Louisiana Western.....	Nov. 207	366,791	111,135	510,179	222,014	110,961	12,285	146,419	18,594	514,204	33,347	-52,130	208,005
.....	11 mos. 207	3,328,932	1,234,263	4,888,747	1,320,146	924,857	87,824	1,326,264	169,902	3,859,518	647,527	-602,867	-602,867
Morgan's L. & T. R. R. & S. S. Co., Nov. 400	400	709,680	181,147	949,097	265,378	228,075	19,003	375,949	32,550	11,348	25,990	-65,286	-234,536
.....	11 mos. 400	6,713,084	2,003,161	9,424,808	1,971,463	2,157,470	141,000	3,530,598	309,757	8,144,040	711,202	442,181	-357,838
Texas & New Orleans.....	Nov. 469	682,024	183,514	965,462	290,000	291,692	10,564	430,472	26,063	1,108,079	168,769	-214,223	-277,325
.....	11 mos. 469	6,131,758	1,933,414	9,070,189	2,559,732	2,614,606	103,679	3,641,056	248,009	9,653,936	896,491	-1,228,696	-1,587,087
Spokane International.....	Nov. 165	103,978	24,033	132,733	31,778	10,863	2,316	46,545	6,532	97,749	26,078	16,741	-6,184
.....	11 mos. 161	1,148,853	220,741	1,413,317	261,255	115,900	27,550	446,380	60,925	914,504	438,168	361,349	114,110
Spokane, Portland & Seattle.....	Nov. 549	554,588	194,693	805,364	124,226	121,669	11,532	204,303	24,099	497,627	210,753	205,641	92,896
.....	11 mos. 549	5,591,151	2,148,847	8,399,442	1,751,159	1,448,057	96,274	2,768,883	279,958	6,142,863	1,221,477	1,033,792	-637,089
Tennessee Central.....	Nov. 292	189,317	51,273	253,358	55,241	70,192	4,983	158,645	11,348	300,393	52,878	-88,254	10,623
.....	11 mos. 292	1,922,363	591,654	2,702,733	552,575	588,235	53,240	1,416,418	118,151	2,728,422	-25,584	-88,017	108,096
Term. Railroad Assoc. of St. Louis.....	Nov. 36	.....	.....	468,440	123,428	71,055	953	180,685	9,398	388,528	82,94	158,527	89,196
.....	11 mos. 36	.....	8,477	4,363,426	938,787	727,650	11,225	2,010,904	101,054	3,359,798	88,006	1,476,017	17,979
East St. Louis Connecting.....	Nov. 3	.....	.....	26,577	24,988	317,298	3,347	999,905	4,594	147,370	3,568	-5,583	43,220
.....	11 mos. 3	.....	.....	1,356,672	179,937	317,298	3,347	999,905	4,594	1,343,530	-213,844	-357,614	52,617
St. L. Merchants Bridge Terminal, Nov. 9	9	.....	.....	436,368	88,908	56,952	884	242,469	9,863	309,076	31,471	31,471	64,169
.....	11 mos. 9	.....	2,883	3,958,562	646,450	671,303	9,734	2,777,852	98,573	4,203,914	106,20	-353,390	-82,488
St. Louis Transfer Ry.....	Nov. 6	.....	.....	117,721	11,285	11,189	205	44,952	2,219	69,851	45,906	41,243	16,818
.....	11 mos. 6	.....	.....	1,262,943	107,535	170,831	2,283	627,711	28,335	936,715	321,524	245,308	35,278
Texas & Pacific Ry.....	Nov. 1,946	2,747,823	986,318	3,981,423	661,660	933,026	45,415	1,748,529	106,177	3,547,381	408,690	308,407	96,416
.....	11 mos. 1,946	23,561,039	11,045,421	37,588,969	7,213,456	44,999	1,109,091	16,417,716	34,101,918	2,347,091	2,390,362	971,982	-2,310,014
Toledo Peoria & Western.....	Nov. 247	107,433	53,621	176,895	39,484	56,888	2,858	103,661	7,868	210,722	33,827	-2,530	-6,202
.....	11 mos. 247	1,128,340	563,565	1,853,934	336,499	491,166	30,774	1,079,469	80,492	2,018,301	-164,367	-257,867	77,413
Toledo, St. Louis & Western.....	Nov. 454	881,797	317,229	945,998	105,293	195,703	20,661	333,731	16,419	671,807	249,190	206,078	161,141
.....	11 mos. 454	9,494,562	3,962,211	10,350,871	2,130,981	2,057,894	15,133	4,059,931	169,388	8,565,046	1,433,387	938,391	295,966
Ulster & Delaware.....	Nov. 128	83,940	19,931	127,210	30,128	27,162	3,076	90,188	8,534	160,860	39,059	-42,669	-19,364
.....	11 mos. 128	688,834	397,841	1,376,383	245,395	307,776	3,076	970,597	84,548	1,600,152	-257,194	-334,947	-205,911
Union R. R. of Penna.....	Nov. 45	.....	.....	1,137,603	75,010	245,435	317	650,815	7,768	979,346	143,257	230,472	333,615
.....	11 mos. 45	.....	1,962,021	9,928,076	955,555	2,995,239	4,118	6,077,310	91,329	9,533,551	291,524	1,080,786	508,076
Union Pacific.....	Nov. 3,614	9,558,454	2,790,284	12,071,150	18,633,208	23,314,951	997,597	36,615,606	3,552,987	85,987,088	3,335,779	28,777,311	-3,001,587
Los Angeles & Salt Lake.....	Nov. 1,168	1,256,632	464,162	1,876,112	326,577	326,199	43,041	694,004	38,185	1,489,646	280,777	262,951	-306,230
.....	11 mos. 1,168	11,766,815	5,273,278	18,747,862	2,582,871	3,605,563	344,146	6,774,036	422,434	14,354,166	3,389,945	3,213,312	174,656
Oregon Short Line.....	Nov. 2,359	3,239,291	651,768	4,174,174	584,429	742,737	14,753	1,364,265	152,237	2,960,900	70,93	1,015,725	-280,142
.....	11 mos. 2,354	30,594,672	7,160,614	41,371,323	6,708,214	6,708,214	378,141	13,263,741	1,443,937	29,026,934	9,098,739	9,304,619	-712,953
Oregon Wash. R. R. & Nav. Co., Nov. 2,223	2,223	2,014,953	655,339	2,892,123	894,137	502,538	55,885	1,345,101	152,450	2,990,635	-287,241	-384,517	-603,880
.....	11 mos. 2,223	20,574,441	7,027,253	30,568,636	6,527,476	5,402,598	47,573	13,175,690	1,469,037	27,452,231	89,81	3,116,416	-2,893,938
St. Joseph & Grand Island.....	Nov. 258	254,562	39,344	309,190	67,414	60,064	3,009	153,630	17,324	274,224	1,152,547	-11,005	29,313
.....	11 mos. 258	2,520,895	414,642	3,158,785	1,008,952	513,010	27,723	1,621,998	160,119	3,351,982	-334,648	-390,514	-354,017
Utah R. R.....	Nov. 98	203,975	825	204,800	20,298	32,632	672	46,989	2,446	103,037	98,516	87,499	33,460
.....	11 mos. 98	1,803,767	8,627	1,818,356	231,764	337,025	2,887	417,297	33,024	1,021,998	56,20	725,030	294,321
Vicksburg, Shreveport & Pacific.....	Nov. 171	270,989	88,798	387,585	96,890	89,840	9,572	185,202	15,999	384,603	725,030	661,350	-91,346
.....	11 mos. 171	2,679,750	1,088,711	4,092,129	831,210	817,555	87,784	1,663,518	139,565	3,380,805	349,320	240,805	-178,702
Virginian Ry.....	Nov. 523	1,709,089	73,283	1,904,669	217,480	353,789	6,599	589,119	24,690	1,187,014	546,965	603,965	390,373
.....	11 mos. 523	14,217,907	785,304	16,459,957	1,982,780	3,821,293	90,355	5,861,616	331,706	11,526,000	70,02	4,033,949	2,221,250
Wabash R.....	Nov. 2,472	4,419,941	902,934	5,720,548	915,927	1,181,011	115,544	2,691,995	187,383	5,127,016	462,595	277,562	475,805
.....	11 mos. 2,472	39,208,596	10,198,809	54,276,954	9,607,139	13,657,790	1,049,686	27,364,978	1,781,807	53,817,057	99,15	459,897	-4,885,385
Western Maryland.....	Nov. 778	1,968,009	90,458	2,122,564	212,476	507,253	29,056	927,055	55,122	1,745,489	323,075	402,837	328,678
.....	11 mos. 778	15,924,039	1,128,731	18,127,070	3,457,181	5,724,434	423,516	7,813,635	574,789	18,178,571	100,28	602,901	120,995
Western Pacific.....	Nov. 1,011	1,148,667	197,609	1,413,771	202,626	225,769	27,821	544,532	420,239	1,066,301	398,403	291,720	176,760
.....	11 mos. 1,011	11,618,957	2,427,992	14,814,003	2,469,908	2,296,944	307,121	5,265,957	400,239	11,057,116	3,756,887	3,240,893	185,053
Western of Alabama.....	Nov. 133	119,796	88,449	226,765	51,360	51,981	6,522	90,824	10,571	214,357	5,086	3,412	-49,325
.....	11 mos. 133	1,434,974	861,152	2,552,035	414,269	553,653	68,182	975,348	2,146,344	3,284,941	338,913	335,240	-155,996
Wheeling & Lake Erie.....	Nov. 511	1,622,534	561,301	2,586,441	336,445	462,301	14,041	770,228	37,217	1,625,477	104,802	9,212	98,509
.....	11 mos. 511	14,087,511	800,374	16,378,357	2,785,311	4,125,610	156,510	6,986,280	365,397	14,463,132	1,076,448	-98,933	-1,096,893

Equipment and Supplies

Locomotives

THE BOSTON & MAINE is contemplating converting 18 Consolidation type locomotives to switching type locomotives. The company will not carry out the work in its own shops.

Freight Cars

THE CANADIAN NATIONAL RAILWAYS are asking for prices on 5,000 freight cars.

THE EGYPTIAN STATE RAILWAYS will inquire soon, through the car builders, for 50, 10,000-gal. tank cars.

THE RHODESIAN RAILWAYS, reported in *Railway Age* of November 26, as inquiring for 100 gondola cars, have ordered this equipment from German builders.

THE LOUISVILLE & NASHVILLE, reported in the *Railway Age* of December 24, as contemplating the purchase of 2,700 additional freight cars, is now inquiring for 2,000, 40-ton box cars, 300, 55-ton gondola cars, 300, 40-ton coke cars, and 100, 40-ton stock cars.

Passenger Cars

THE ANN ARBOR is inquiring for 8 all-steel passenger train cars.

THE MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE has ordered 3 steel dining cars from the American Car & Foundry Company.

THE SOUTHERN RAILWAY, reported in the *Railway Age* of October 15, as inquiring for 50 passenger cars and 50 baggage cars, has renewed its inquiry for this equipment.

SPANISH GOVERNMENT.—A cablegram from Commercial Attache Cunningham, Madrid, Spain, reports that bids will be opened by the Spanish Government on February 14, in Madrid, for 119 passenger cars and 152 baggage cars.

Iron and Steel

OKURA & Co., 30 Church street, New York, has ordered from the United States Steel Products Company 8,750 tons of 100-lb. rails for use on the South Manchurian Railway.

Signaling

THE NEW YORK, NEW HAVEN & HARTFORD has ordered an 80-lever style "A" mechanical interlocking machine from the Union Switch & Signal Company, for installation at the west end of the New Haven station.

THE NEW YORK CENTRAL has ordered an electro-pneumatic interlocking machine from the Union Switch & Signal Company, for installation at Mott Haven Junction, New York City; 22 working levers, model 14 type, fitted with illuminated lever light indicators.

RESEARCH GRADUATE ASSISTANTSHIPS, maintained by the Engineering Experiment Station of the University of Illinois, Campaign, now number sixteen, including two which have been established under the patronage of the Illinois Gas Association. These assistantships, for each of which there is an annual stipend of \$600, are open to graduates of approved American and foreign universities and technical schools, and applications should be sent to Dean C. R. Richards before March 1. Preference is given to applicants who have had some practical engineering experience following the completion of their undergraduate work. Appointments are made in the spring, and they become effective the first day of the following September.

Supply Trade News

E. M. Blake, production engineer of Charles R. McCormick & Co., San Francisco, and president of the National Association of Railroad Tie Producers, died suddenly at San Francisco on January 12.

The Regan Safety Devices Company, Chicago, proprietor of the automatic train stop which is in use on the Chicago, Rock Island & Pacific, has been incorporated in the state of New York; James S. Regan, president; capital, 500,000 shares of no par value.

George E. Tebbetts, formerly with the construction and engineering division of Stone & Webster, Boston, Mass., and previous to that time bridge engineer of the Kansas City Terminal, has become associated with the railroad department of the Roberts & Schaefer Company, engineers and contractors, Chicago.

D. E. Sawyer has been re-elected general sales manager of the Pollak Steel Company, Cincinnati, Ohio, with office at 120 Broadway, New York; S. K. Morrow, manager of operations, has been appointed manager of sales for its three plants, with office at the Cincinnati works; C. G. Talbott, assistant manager of operations, has been appointed manager of rolled products for the Marion plant; A. C. Weihl, superintendent of the Cincinnati plant, has been appointed general works manager in charge of operations and productions of the Cincinnati, the Chicago and the Marion plants, and V. W. Prather, cost auditor for the Cincinnati plant, has been appointed auditor of the three plants. R. A. Mitchell has succeeded Mr. Weihl as superintendent of the Cincinnati plant; J. H. Deickman has been appointed manager of materials and inspection of its three plants; W. P. Woods has been appointed auditor and G. H. Tallaksen, superintendent of the Chicago plant. The company has recently distributed a unique souvenir; it is a pen made in the form of a miniature standard M. C. B. car axle, with mechanical wheel seat and journal and rough turned center.

Verona Tool Works

The Verona Tool Works, Pittsburgh, Pa., has been re-organized, Alex Laughlin buying the controlling interest of the company from Harry S. Paul, who has retired. The officers of the new company are: William F. Hart, president; Emanuel Woodings, vice-president and general manager, and

F. G. Magnus, secretary and treasurer. John B. Seymour has been appointed district sales manager at Chicago, succeeding Howard C. Mull, who has resigned to accept service with another company, and Porter L. Laughlin has been appointed assistant district sales manager at Chicago, effective January 1.

William F. Hart, the president of the company, entered business with the Lorain Steel Company at Lorain, Ohio, then a part of the Federal Steel Company, in 1899. In 1904, this plant was made a part



W. F. Hart

of the National Tube Company and at that time Mr. Hart was transferred to the Pittsburgh office of the latter company, where he remained until 1909. Upon the latter date he

entered the service of the Central Tube Company, Pittsburgh, Pa., which company he was serving as vice-president at the time of his appointment to the presidency of the Verona



E. Woodings

Tool Works in November, 1920. Previous to 1909 Mr. Hart was in the operating and manufacturing end of the steel business but since that time his experience has been entirely executive, embracing both manufacturing and sales.

Emanuel Woodings, vice-president and general manager of the company, entered upon his thirty-fourth year of service with the company on January 6, 1921. His service began in the machine shop of the company in 1877, and he has served successively as

foreman, superintendent and general manager. He was promoted to the latter position in 1904, and upon the reorganization of the company, was elected vice-president.

John B. Seymour, who has been appointed district sales manager at Chicago, was born in Newburyport, Mass., in 1877, and was educated at Yale, graduating in the class of



J. B. Seymour

1899. He immediately entered the engineering service and, until 1904, was employed by different roads in the Middle West. During that year he became connected with the National Lock Washer Company as sales agent, being promoted to western manager in 1911. In 1917 he resigned to enter the second officers' training camp at Fort Sheridan and during the war served as a lieutenant in the infantry. Upon his return from abroad and since his discharge, Mr. Seymour has been engaged in exploration and development work upon various different projects.

Porter L. Laughlin, assistant district sales manager at Chicago, attended Washington and Jefferson College and in 1913 became connected with the Central Tube Company, Pittsburgh, Pa. He served this company successively as purchasing agent, assistant to the general manager and special representative from January 1, 1912, to December 1, 1920, except for the period from September, 1917, to February, 1919, when he served in the army as a lieutenant in the infantry.

C. E. Adams, vice-president of the **Air Reduction Sales Company, New York**, has been elected president to succeed **A. F. Blagden**, who has resigned to become associated with the **American Dyewood Company, New York**. **John McHugh** has been elected a director to succeed **H. R. Hoyt**, deceased.

George A. Post will retire from the presidency of the **Standard Coupler Company, New York**, on January 31, having notified the directors of the company in November last of his desire to devote his time and energies to other interests with which he is identified. Mr. Post has been president of the **Standard Coupler Company** since its organization in

1894. His successor will be **Edmund H. Walker**, who has been associated with Mr. Post as vice-president of the company for the past 15 years.

R. J. Hinkle, whose appointment as railroad representative of the **Garlock Packing Company, Palmyra, N. Y.**, for the territory embracing eastern and southern railways, with headquarters at Philadelphia, Pa., was announced in the *Railway Age* of December 31, began railroad work as a machinist apprentice in the Frankfort (Ind.), shops of the Toledo, St. Louis & Western. He later was mechanical draftsman in the office of the superintendent of motive power at Frankfort until 1908, and he then served as mechanical draftsman on power and transmission machinery during the construction of the Argo (Ill.) plant of the Corn Products Refining Company. From 1910 to 1913 he was chief mechanical engineer for Armour Car Lines at Chicago, and in 1914 served as special representative of the Railway Terminal Commission of Chicago. He was appointed general manager of the Hill City Railway Company in 1915, in which position he served to date with the exception of a period during the war, when he served as first lieutenant in the Engineer Corps in connection with the office of Director General of Military Railways at Washington, D. C. He is a son of **C. L. Hinkle**, general manager of the Chicago Great Western.

Obituary

William H. Sayre, president of the **American Abrasive Metals Company, New York**, died suddenly at his home in Glen Ridge, N. J., on January 6. He was born at Mauch Chunk, Pa., in 1865, and graduated from Lehigh University as a mechanical engineer in 1886, and since that time has been actively engaged in some line of business in which his engineering ability was applied. He began his practical experience in railroad building in the Northwest. Mr. Sayre later became president of the International Contracting Company, executing many dredging contracts in New York and other harbors, and also served as a consulting engineer on the Cape Cod canal. He was among the first to apply electric welding commercially, having organized the Federal Electric Welding Company, New York, and the Anthracite Electric Welding Company, Wilkes-Barre, Pa. In 1911 he organized the American Abrasive Metals Company, of which he was president until the time of his death.

Trade Publications

"WINTER IN CANADA."—The Canadian Pacific has issued a 32-page attractively prepared booklet, which shows by word and pictures something of the charm of the Canadian winter from coast to coast.

DUFF JACKS.—The Duff Manufacturing Company, Pittsburgh, Pa., has issued a new catalog of 140 pages listing its complete line of jacks, including track, car, locomotive, bridge, journal, trench brace and cable reel jacks. The first pages of the catalog are devoted to illustrations, tables and descriptions of the individual jacks, and the latter portion to illustrations and lists of the parts of all jacks.

ENGINEERS' AND SURVEYORS' SUPPLIES.—A 40-page catalogue of field and office supplies has been recently issued by the C. F. Pease Company, Chicago. This book lists drawing, profile and cross-section papers; tracing cloths; blueprint papers and blue-printing machines; drafting-room furniture and such field supplies as transits, levels, ranging poles, leveling rods, etc. The book is well illustrated, while prices and descriptions of each article are given.

TUBULAR STEEL POLES.—Bulletin No. 14-C of the National Tube Company, Pittsburgh, Pa., is an attractive 48-page booklet which sets forth the advantages of tubular steel poles. The application of this type of support to high automatic or manual signals, trolley wires, telegraph and telephone lines, transmission lines and lighting fixtures, is illustrated and described. A tabulation of sizes, weights, etc., facilitates the selection of the pole best suited for the particular service. The closing pages of the bulletin are devoted to tables, giving the properties of steel pipe.

Railway Construction

ANN ARBOR.—This company has awarded a contract to the American Bridge Company for the erection of a bridge over the Raisin river at Dundee, Mich.

ATCHISON, TOPEKA & SANTA FE.—This company is accepting bids for the construction of a one-story brick addition to its machine shop at Argentine, Kan. The structure will be 102 ft. by 115 ft. in area and will cost about \$45,000.

ATLANTA & ST. ANDREWS BAY.—This company has applied to the Interstate Commerce Commission for authority to abandon service on a branch from its mail line just north of Panama City, Fla., to St. Andrews, Fla.

ATCHISON, TOPEKA & SANTA FE.—This company, which was announced in the *Railway Age* of November 26 (page 951), as contemplating the construction of a coaling station at Shawnee, Okla., has awarded the contract for this work to Fairbanks, Morse & Co., Chicago.

CHESAPEAKE & OHIO.—This company contemplates the construction of a new passenger station at Covington, Ky.

CHESAPEAKE & OHIO.—This company contemplates the construction of a new roundhouse at Peru, Ind.

DULUTH & IRON RANGE.—This company will rebuild its station at Allen Junction, Minn., which was recently destroyed by fire.

FORT WORTH & DENVER CITY.—This company contemplates extensions and improvements to its shops and engine house facilities at Fort Worth, Childress and Amarillo, Tex.

GOLDEN BELT.—This company has applied to the Interstate Commerce Commission for a certificate authorizing the construction of a line to cost \$64,000,000 from Great Bend to Buckeye Township, Ellis County, Kan.

ILLINOIS CENTRAL.—This company, which was announced in the *Railway Age* of December 10 (page 1044), as accepting bids for the strengthening and raising of its levee at Helena, Ark., at a cost of approximately \$30,000, has awarded the contract for this work to M. J. Roach, Memphis, Tenn. The company has withdrawn its inquiry for bids for the construction of frame freight and passenger stations at Sarpy, La., to cost approximately \$20,000, and at Dowell, Ill., to cost about \$8,000, and will construct these stations with company forces.

LOUISVILLE & NASHVILLE.—This company, which was announced in the *Railway Age* of December 3 (page 997), as contemplating the construction of a 600-ton coaling and sanding station at Loyall, Ky., has awarded a contract to the Roberts & Schaefer Co., Chicago, for a reinforced concrete gravity sanding plant at Loyall.

LOUISVILLE & NASHVILLE.—This company, which will construct a 600-ton coaling station at Loyall, Ky., with company forces, has ordered the automatic coal elevating machinery for this station from the Ogle Construction Company, Chicago.

MISSOURI, KANSAS & TEXAS.—This company contemplates extensions to its freight house and rearrangement of its yard facilities at Kansas City, Mo., at an approximate cost of \$100,000.

MORGANTOWN & WHEELING.—This company has awarded a contract to B. M. Chaplin & Co., Morgantown, W. Va., for the construction of a second main track from Randall, W. Va., to Osage, a distance of one mile. The work will involve the construction of two small steel bridges.

POTATO CREEK.—The Interstate Commerce Commission has issued a certificate authorizing this company to construct an extension of 2.22 miles to a connection with the Pennsylvania at Hamlin, Pa., and to abandon 13.49 miles of its present line between Keating Summit and Norwich.

TEXAS MIDLAND.—This company has applied to the Interstate Commerce Commission for a certificate authorizing the construction of a line between Greenville and Commerce, Texas, a distance of 14 miles.

Railway Financial News

DIVIDENDS have been declared by the following roads:

Central of Georgia:—Common, 2½ per cent; preferred, 3 per cent; payable December 31 to holders of record December 31.

Nashville, Chattanooga & St. Louis:—3½ per cent semi-annual, payable to holders of record January 22.

Pere Marquette:—Prior preferred, 1¼ per cent quarterly, payable February 1 to holders of record January 15.

Pittsburgh & West Virginia:—Preferred, 1½ per cent quarterly, payable February 28 to holders of record February 1.

ANN ARBOR.—The Interstate Commerce Commission has approved a loan of \$400,000 to this company to aid the carrier in meeting maturing indebtedness aggregating \$620,000. The company itself is required to finance \$320,000 to meet the loan of the government.

BANGOR & ARROSTOOK.—This company has been authorized by the Interstate Commerce Commission to issue \$320,000 of equipment trust certificates to be sold at not less than 95.5 per cent of their face value and to pledge the deferred lien equipment trust certificates, together with certain bonds, with the Secretary of the Treasury as security for a loan from the United States government.

BOYNE CITY, GAYLORD & ALPENA.—This company has applied to the Interstate Commerce Commission for authority to issue short term notes amounting to \$250,000 for two years at 7 per cent.

CHESAPEAKE & OHIO.—This company has been authorized by the Interstate Commerce Commission to procure the authentication and delivery by corporate trustee of \$2,502,000 of its first lien and improvement 20-year, 5 per cent, mortgage bonds and to pledge \$2,206,000 of this amount, together with \$1,553,000 of the bonds as part security for a loan from the government.

CHICAGO & EASTERN ILLINOIS.—The foreclosure sale of this road, set for January 11, has again been postponed until February 8.

FEDERAL VALLEY.—This company has been authorized by the Interstate Commerce Commission to issue \$24,940 of promissory notes at 7 per cent, payable to the order of the Lima Locomotive Works, and \$3,000 of promissory notes at 7 per cent to the Ohio National Bank of Columbus, Ohio.

HUNTINGDON & BROAD TOP MOUNTAIN.—The Interstate Commerce Commission has approved a loan of \$60,550 to this company to aid it in the construction of a modern bridge on its main line at or near Saxton, Pa., at a total estimated cost of \$150,000. The company itself is required to finance about \$60,500 to meet the loan of the government.

LEHIGH & HUDSON RIVER.—The stockholders of record September 10, 1920 are given the right to subscribe at par between January 10 and February 10 to \$2,987,000 capital stock to the extent of 173.7 per cent of their holdings. All payments of subscriptions shall be made at the office of the treasurer on or before February 10. After February 10 fractional receipts, resulting from the payment of fractional warrants, will not be converted into stock, but will be redeemed in cash, at said office, at rate of \$100 per whole share. The stockholders on September 10, 1920, increased the authorized capital stock from \$1,720,000 to \$5,000,000. The proceeds of the above \$2,987,000 stock will be used to pay off the \$2,587,000 mortgage debt and the \$400,000 debentures which matured July 1, 1920. The balance of the increased stock, \$293,000 will be held in the treasury.

MARION & RYE VALLEY.—This company has applied to the Interstate Commerce Commission for authority to assume liability as guarantor and endorser of a note to be issued by the Virginia Southern for a loan of \$38,000 from the United States Government.

MOORE HAVEN & CLEWISTON.—This company has been authorized by the Interstate Commerce Commission to issue \$50,000 of first mortgage 6 per cent gold bonds.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—This company has filed an application with the Interstate Commerce Commission for

authority to issue and sell \$495,000 of its first consolidated mortgage 5 per cent gold bonds now nominally issued under the mortgage of April 2, 1888, which are due on April 1, 1928, to reimburse the treasury for expenditures and furnish it with working capital. It is proposed to sell the bonds at not less than 86.24 to the Harris Trust & Savings Bank, Chicago.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—The stockholders will vote March 7 on authorizing the directors to take all necessary steps to legally consummate the execution, issuance and sale of \$1,000,000 first consolidated mortgage 5 per cent gold coupon bonds of 1883, or any portion thereof.

PENNSYLVANIA.—The resignation of A. W. Mellon, of Pittsburgh, as a director of this company, was accepted at a meeting of the board on January 12. Mr. Mellon's resignation was presented so as to save both himself and the Pennsylvania Railroad from any embarrassment that might arise because of Section 10 of the Clayton Act, which became effective January 1, 1921, respecting so-called interlocking directors. Mr. Mellon has been a director since February, 1920.

The stockholders will vote March 8 on the following propositions:

(1) Authorizing an increase of the indebtedness to be made when and as prescribed by the directors; (2) of changing the date of the annual meeting of, and the annual election of directors by the stockholders. (3) Leases of the railroads, property and franchises of the following companies, now operated as part of the system, viz.: Cincinnati, Lebanon & Northern; Cleveland, Akron & Cincinnati; Cumberland Valley & Martinsburg; Englewood Connecting; Grand Rapids & Indiana; Indianapolis & Frankfort; Louisville Bridge & Terminal; New York Bay, New York, Philadelphia & Norfolk, Ohio Connecting; Perth Amboy & Woodbridge; Pittsburgh, Cincinnati, Chicago & St. Louis; Pittsburgh, Ohio Valley & Cincinnati; South Chicago & Southern; Toledo, Columbus & Ohio River; and Wheeling Terminal. It is stated that the company has not yet determined the amount of increase in indebtedness which stockholders will be asked to authorize at the annual meeting on March 8. It is understood that at the present time there is indebtedness authorized of \$65,000,000 which has not been availed of. The amount of increase sought above this \$65,000,000 available will be announced later. The fact that an increase in indebtedness is authorized does not mean that the company will issue bonds or notes up to the full amount of the authorization, but it gives the company leeway to meet financial requirements when needed.

PITTSBURGH & LAKE ERIE.—This company has applied to the Interstate Commerce Commission for authority to issue promissory notes aggregating \$1,500,000 for six months at 6 per cent, payable to the order of the applicant at the Union Trust Company of Pittsburgh in renewal of outstanding notes.

RICHMOND TERMINAL.—This company has applied to the Interstate Commerce Commission for authority to issue two time notes for \$12,500 each, one to the Richmond, Fredericksburg & Potomac and one to the Atlantic Coast Line, dated January 1, 1921, payable on or before January 1, 1924, at 6 per cent.

SOUTHERN.—This company has been authorized by the Interstate Commerce Commission to issue \$5,900,000 of development and general mortgage 4 per cent bonds and to pledge them with the Secretary of the Treasury as security in part for a loan of \$3,825,000 from the government.

WATERLOO, CEDAR FALLS & NORTHERN.—The Interstate Commerce Commission has approved the making of a loan of \$60,000 to this company to aid the company in meeting its maturing indebtedness in a total principal amount of \$144,325. The company itself is required to finance \$84,325 to meet the loan of the government.

WESTERN MARYLAND.—This company has been authorized by the Interstate Commerce Commission to issue \$2,700,000 of first and refunding mortgage 5 per cent gold bonds and to pledge them with the Secretary of the Treasury as security for a loan from the government of \$2,122,800.

WHEELING & LAKE ERIE.—The Interstate Commerce Commission has approved a loan of \$500,000 to this company to aid it in meeting its maturing indebtedness, amounting to \$1,008,800. The carrier itself is required to finance \$508,800 to meet the loan of the government.

WILMINGTON, BRUNSWICK & SOUTHERN.—This company has applied to the Interstate Commerce Commission for a loan of \$200,000 to be used in paying off certain bank loans and for the purchase of ten 40 ft. box cars, fourteen 40 ft. flat cars, one freight locomotive, 70 pound rail for two miles of line, and additional dock facilities at Southport costing \$35,000.

Railway Officers

Executive

H. W. Miller has been appointed vice-president in charge of operation of the Southern, succeeding E. H. Coapman, deceased.

T. S. Davant, who retired as vice-president in charge of traffic of the Norfolk & Western on January 1, was born at Gillisonville, S. C. He entered railway service in 1865. In 1869 he became station agent for the Charlotte & South Carolina (now part of the Southern) at Ft. Mills, S. C. The same year he became chief clerk of the consolidated agency of the Charlotte, Columbia & Augusta (also now part of the Southern) at Columbia, S. C. In 1871 he became chief clerk in the office of the general freight and passenger agent of the same road. From 1874 to 1877 he was general freight and passenger agent for the Port Royal (now a part of the Charleston & Western Carolina). During the latter year he became assistant general freight and passenger agent of the Memphis & Charleston (now a part of the Southern). In 1886 he became general freight agent of the East Tennessee, Virginia & Georgia (now a part of the Southern) and remained in that position until 1892, when he went to the Norfolk & Western in the same capacity. In 1903 he was promoted to freight traffic manager, and in 1907 to vice-president and traffic manager. Mr. Davant became vice-president in charge of traffic in 1912.

Operating

J. D. Beaver has been appointed superintendent of transportation of the Pittsburgh, Shawmut & Northern, with headquarters at St. Marys, Pa., effective January 1.

F. M. Metcalfe, superintendent of the safety section of the Northern Pacific, with headquarters at St. Paul, Minn., has been appointed assistant to the general manager, with the same headquarters, effective January 1.

H. A. Adams, who has been appointed assistant to the general manager of the Union Pacific, with headquarters at Omaha, Neb., with jurisdiction over all safety work, effective



H. A. Adams

January 1, entered railroad service in 1885 as a brakeman and conductor on the Kansas City, Fort Scott & Gulf, now a part of the St. Louis-San Francisco. During the next 20 years he was employed as brakeman and conductor on the Southern Pacific, with headquarters at Los Angeles, Cal., and later in the same capacity with the Atchison, Topeka & Santa Fe, with headquarters at Kansas City, Mo. In 1905 he was appointed inspector of safety appliances and accident investigation by the Interstate Commerce Commission, and was associated with the Commission until 1917, when the government took over the operation of the railroads. During the period of federal control, Mr. Adams was regional supervisor of safety of the Central Western region, with headquarters at Chicago. He returned to the Interstate Commerce Commission on March 1, 1920, taking up his former work, which he continued until December 31, 1920, when he resigned to accept his appointment with the Union Pacific.

Peter Groome, general safety agent of the Union Pacific, with headquarters at Omaha, Neb., has been appointed assistant superintendent on the Colorado division, with headquarters at Denver, Colo., effective January 1.

Allan Pollok has been appointed manager of dining cars, hotels and restaurants of the Southern Pacific, with headquarters at San Francisco, effective January 1, succeeding **S. M. Estabrook**, who has been appointed assistant manager of dining cars, hotels and restaurants.

A. Allerton, manager of the Algonquin Hotel, St. Andrews, N. B., and the Place Viger Hotel, Montreal, both hotels of the Canadian Pacific, has been appointed manager-in-chief of hotels of that company, effective January 1, succeeding **F. L. Hutchinson**, who has resigned to engage in other business.

W. R. Hensley, trainmaster of the Louisville, Henderson & St. Louis, who has been on a leave of absence since August 28, while serving as vice-chairman of the sub-committee on car service at Louisville, Ky., assumed his regular duties on December 15 upon dissolution of the sub-committee. Acting trainmaster **J. S. Moorman** has again become assistant trainmaster and car accountant.

F. M. Metcalfe, superintendent of the safety section of the Northern Pacific, with headquarters at St. Paul, Minn., who has been appointed assistant to the general manager, with the same headquarters, effective January 1, has spent his entire railroad career in the service of the Northern Pacific. From 1907 to 1917, he was successively chief clerk to the general manager and representative of the vice-president in charge of operation. When the government took over the railroads Mr. Metcalfe was made superintendent of safety, the position which he held at the time of his recent appointment.

Traffic

G. A. Harrison, general agent, passenger department of the Grand Trunk at Portland, Me., will also act in the same capacity for the Canadian National effective January 1.

J. D. Anderson has been appointed commercial agent on the Hocking Valley, with headquarters at Toledo, and **H. E. Todd** has been appointed commercial agent with headquarters at Columbus, Ohio.

J. A. Werne, general agent on the Great Northern, with headquarters at Boston, Mass., has been transferred to New York, succeeding **A. D. Mercer**, who has resigned, effective January 1. **Charles H. Walker** succeeds Mr. Werne.

Henry Blakely, general freight agent of the Northern Pacific with headquarters at St. Paul, Minn., has been promoted to freight traffic manager, effective January 1, succeeding **John B. Baird**, who has retired from active service.

T. B. Montgomery, assistant freight traffic manager of the Northern Pacific with headquarters at St. Paul, Minn., has been appointed general freight agent, effective January 1, succeeding **Henry Blakely**, who has been promoted to freight traffic manager.

J. B. Baird, freight traffic manager of the Northern Pacific, who retired on January 1, was born June 21, 1855, at Woodlawn, Md. He began railway work in 1876 as a clerk in the general offices of the Pennsylvania at Philadelphia. Later he went to the Chicago, St. Paul, Minneapolis & Omaha, as a clerk in the general manager's office, and was subsequently employed as rate clerk in the general freight office of the Northern Pacific. Mr. Baird was in time promoted to assistant general freight agent and served in that capacity until May 1, 1903. He was then appointed general freight agent and served in that office until his appointment as freight traffic manager, which came November 1, 1913.

Mechanical

Paul Lebenbaum has been appointed assistant electrical engineer of the Southern Pacific, with headquarters at San Francisco, Cal., effective January 1, succeeding **F. E. Geibel**, resigned.

W. J. Robieder, general master car builder of the Canadian Pacific, has retired and the position has been abolished. The duties of general master car builder have been assumed by the assistant chief mechanical engineer.

R. Preston, assistant superintendent of motive power of the Canadian Pacific, with headquarters at Winnipeg, Man., has been promoted to superintendent motive power and car department, Eastern Lines, with headquarters at Montreal, effective January 1.

H. H. Stephens, master mechanic of the Pecos division of the Atchison, Topeka & Santa Fe with headquarters at Clovis, N. M., has been promoted to mechanical superintendent of the Southern district with headquarters at Amarillo, Tex., effective January 1, succeeding **W. D. Deveny**, assigned to other duties. **W. D. Hartley**, general foreman, locomotive department, at Richmond, Calif., succeeds Mr. Stephens at Clovis.

Engineering, Maintenance of Way and Signaling

P. C. Connelly, roadmaster on the Western Pacific, with headquarters at Oakland, Cal., has been appointed general roadmaster, with the same headquarters, with jurisdiction over the entire line, effective January 1.

L. A. Guthrie, signal inspector on the Canadian National, with headquarters at Winnipeg, Man., has been promoted to signal supervisor, with jurisdiction over the lines between Winnipeg and Watrous, Sask. He will retain his former headquarters.

A. H. Porter, engineer of roadway of the Charleston & Western Carolina, with headquarters at Augusta, Ga., has been promoted to valuation engineer, with the same headquarters, and **L. S. Jeffords**, formerly assistant engineer on the Atlantic Coast Line, with headquarters at Savannah, Ga., has been appointed engineer maintenance of way, with headquarters at Augusta, Ga., the positions of engineer of roadway, assistant engineer and general roadmaster having been abolished.

Obituary

John W. Daly, general Western agent of the New York Central with headquarters at Chicago, fell dead at the entrance to the Muehlebach Hotel, Kansas City, Mo., on the evening of January 12.

Robert C. Sattley, valuation engineer of the Chicago, Rock Island and Pacific, died suddenly at his home in Chicago on December 31. He was born in Ferrisburgh, Vt., on November 26, 1856. He was educated at the University of Vermont, graduating in the class of 1879, and entered railroad service in the same year as assistant engineer on the Northern Pacific. He was made superintendent of bridges and buildings in 1894, and served in this capacity until 1905, when he became division engineer. In 1907 he was appointed assistant engineer on the Chicago & North Western, and after a year of service as locating engineer on the Denver, Laramie & Northwestern, he accepted an appointment as valuation engineer on the St. Louis-San Francisco. In 1910 Mr. Sattley was appointed valuation engineer of the Chicago, Rock Island & Pacific and served continuously in this position until his death.



R. C. Sattley